

**SUPPLEMENT TO  
NASA Contractor Report 178407**

# **COCKPIT DATA MANAGEMENT**

**J.L. Groce and G.P. Boucek**

**BOEING COMMERCIAL AIRPLANE COMPANY  
P.O. BOX 3707, SEATTLE, WASHINGTON 98124**

**CONTRACT NAS1-18027  
February 1988**

**ORIGINAL CONTAINS  
COLOR ILLUSTRATIONS**



**National Aeronautics and  
Space Administration**

**Langley Research Center  
Hampton, Virginia 23665-5225**

# SUPPLEMENT

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**APPENDIX A**

**SCENARIO COMMUNICATION EVENTS AND DATA LINK IDU PAGES**

## APPENDIX A

This appendix defines the chronological sequence of communication related events in each TLA scenario, along with the data link IDU page formats utilized. The scenario time in seconds designating the specific events in each scenario can be utilized to locate the corresponding crew procedures and tasks in Appendix B, which is also referenced to scenario time.

This appendix is presented in three separate sections representing the normal ILS approach, the ILS approach with weather deviation, and the ILS missed approach with a reroute.

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## **A.1 NORMAL ILS APPROACH**

Table A-1 defines the chronological sequence of normal ILS approach scenario events. The events apply to both VHF voice and data link scenarios. Figures A-1 through A-18 illustrate the data link IDU page formats which correspond to the Table A-1 events. The pages are in chronological sequence, with a pointer indicating pilot-selected options on each page.

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**A5**

Table A-1. Normal ILS Approach

<u>SCENARIO TIME</u> (SECONDS)	<u>COMMUNICATION EVENT</u>
200.4	VECTOR TO DOWNWIND
375.4	DESCENT CLEARANCE
450.0	ETIS REQUEST
464.0	ETIS REPORT FOR ATL
525.4	VECTOR TO BASE
575.4	ILS APPROACH CLEARANCE
675.4	LANDING CLEARANCE
987.4	HANDOFF TO GROUND CONTROL
1014.4	TAXI INSTRUCTIONS

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MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-1

A T C   U P L I N K   N O .   1

T U R N   R I G H T   H E A D I N G  
2 7 0 ,   D E S C E N D   A N D  
M A I N T A I N   6 0 0 0   M S L .  
M O N I T O R   A T L   A P P R O A C H  
O N   1 2 7 . 2 5   M H Z .

- E N D   O F   M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-2*



MODE - S DATA LINK MENU

▶ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-3

A T C U P L I N K N O . 1

D E S C E N D A N D M A I N T A I N  
5 0 0 0 M S L .

- E N D O F M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-4*

MODE - S DATA LINK MENU


< A T C U P L I N K S	F L T P L A N >
P E N D I N G	C H A N G E
< R E Q U E S T F O R	U P L I N K S >
C L E A R A N C E	R E C E I V E D
< W E A T H E R	
R E Q U E S T S	
 < E T I S	
R E Q U E S T S	
< P I R E P S	C O N F I G U R E >
	S Y S T E M
	R E T U R N >

Figure A-5

ETIS REQUEST FOR KATL

▶ < FULL REPORT                      UPDATE >

A      B      C      D      E      F      G

H      I      J      K      L      M      N

O      P      Q      R      S      T      U

V      W      X      Y      Z

B K S P              C L R              E N T

*Figure A-6*

MODE - S DATA LINK MENU

▶ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-7

ETIS REPORT FOR ATL  
XXXX Z  
SKY : 25 SCT / 40 BKN  
VIS : 16  
WIND : 110 / 10 / G 17  
TEMP / DP : 59 / - -  
ALT : 29 . 84  
APPR : PARALLEL ILS APRCHS  
RW08L / RW09R  
REMARKS : - - - - -



< P R I N T E R

R E T U R N >

*Figure A-8*

MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-9

A T C   U P L I N K   N O .   1

T U R N   L E F T   H E A D I N G  
1 8 0 .

- E N D   O F   M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-10*



MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-11

A T C   U P L I N K   N O .   1

1 2   N M   F R O M   O M ,   T U R N  
L E F T   H E A D I N G   1 1 0 ,  
M A I N T A I N   5 0 0 0   M S L  
U N T I L   C R O S S I N G   B A H R R ,  
C L E A R E D   F O R   I L S   R W 8 L  
A P P R O A C H ,   M O N I T O R  
T O W E R   O N   1 1 9 . 5   A T  
B A H R R .

- E N D   O F   M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-12*

MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-13

A T C U P L I N K N O . 1

N U M B E R 3 F O R R W 8 L ,  
D C - 9 3 N M A H E A D . W I N D  
1 1 0 A T 9 , C L E A R E D T O  
L A N D R W 8 L .

- E N D O F M E S S A G E -

< U N A B L E

W I L C O > 

*Figure A-14*

MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-15

A T C U P L I N K N O . 1

E X I T R U N W A Y N E X T  
I N T E R S E C T I O N . M O N I T O R  
G R O U N D 1 2 1 . 9 W H E N  
C L E A R O F R U N W A Y .

- E N D O F M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-16*

MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-17

A T C   U P L I N K   N O .   1

T A X I   T O   R A M P   V I A  
N E / S W   T A X I W A Y .

- E N D   O F   M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-18*



## A.2 ILS APPROACH WITH WEATHER DEVIATION

Table A-2 and Figures A-19 through A-29 illustrate the sequence of events and page formats for those portions of the weather deviation scenarios that differ from the normal ILS scenarios.

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Table A-2. Weather Deviation

<u>SCENARIO TIME</u> (SECONDS)	<u>COMMUNICATION EVENT</u>
200.4	VECTOR TO DOWNWIND
214.0	REQUEST FOR DIFFERENT HEADING
231.0	VECTOR FOR NEW HEADING
371.0	ADVISING CLEAR OF WEATHER
384.0	VECTOR TO RESUME ON COURSE

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MODE - S DATA LINK MENU

▶ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-19

A T C   U P L I N K   N O .   1

T U R N   R I G H T   H E A D I N G  
2 7 0 ,   D E S C E N D   A N D  
M A I N T A I N   6 0 0 0   M S L .  
M O N I T O R   A T L   A P P R O A C H  
O N   1 2 7 . 2 5   M H Z .

- E N D   O F   M E S S A G E -

▷ < U N A B L E

W I L C O >

*Figure A-20*

U N A B L E   T O   C O M P L Y

D U E   T O :

▷ < U N S A F E   W X   C O N D X - S T R O N G  
R A D A R   E C H O E S   N E A R B Y  
< U N S A F E   W X   C O N D X - S E V E R E  
I C I N G   T H A T   L O C A T I O N  
< R E Q U I R E D   P E R F O R M A N C E  
N O T   A V A I L A B L E  
< C L E A R A N C E   N O T  
C O N S I S T E N T - V E R I F Y

*Figure A-21*

REQUEST FOR CLEARANCE  
  
 < PUSHBACK      KEEP    CURRENT >  
                          CLEARANCE  
 < REQUEST      MODIFY    FLIGHT >  
       FOR TAXI      PLAN    ROUTE  
 < INITIAL      MAKING    MISSED >  
       ROUTING                    APPROACH  
 < ALTITUDE                    FREE    TEXT >  
       REQUEST  
 ▷ < HEADING      RESUME    ORIG - >  
       REQUEST      INAL    ROUTE  
 < SPEED REQUEST            RETURN >

*Figure A-22*

		R E Q U E S T	F O R			
		N E W	H E A D I N G			
	<	R E Q U E S T	T O	F L Y		
		H E A D I N G	X X X		1	2 3
▷	<	R E Q U E S T	T E M P			
		H E A D I N G	<u>3 0 0</u>		4	5 6
		- W I L L	A D V I S E -			
					7	8 9
						0
						BKSP
					CLR	ENT

Figure A-23

MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-24



A T C   U P L I N K   N O .   1

T U R N   R I G H T   H E A D I N G  
3 0 0 ,   D E S C E N D   A N D  
M A I N T A I N   6 0 0 0   M S L .  
M O N I T O R   A T L   A P P R O A C H  
O N   1 2 7 . 2 5   M H Z .

- E N D   O F   M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-25*


```

MODE - S DATA LINK MENU

< A T C   U P L I N K S           F L T   P L A N >
    P E N D I N G                   C H A N G E
< REQUEST FOR           U P L I N K S >
    C L E A R A N C E             R E C E I V E D
< W E A T H E R
    R E Q U E S T S
< E T I S
    R E Q U E S T S
< P I R E P S           C O N F I G U R E >
                           S Y S T E M
                           R E T U R N >

```

*Figure A-26*

REQUEST FOR CLEARANCE  
  
 < PUSHBACK      KEEP    CURRENT >  
                          CLEARANCE  
 < REQUEST      MODIFY    FLIGHT >  
       FOR TAXI      PLAN    ROUTE  
 < INITIAL      MAKING    MISSED >  
       ROUTING                    APPROACH  
 < ALTITUDE                    FREE    TEXT >  
       REQUEST  
 < HEADING      RESUME    ORIG - >   
       REQUEST      INAL    ROUTE  
 < SPEED REQUEST      RETURN >

*Figure A-27*

MODE - S DATA LINK MENU

▶ < ATC UPLINKS                    FLT PLAN >  
    PENDING                        CHANGE  
< REQUEST FOR                    UPLINKS >  
    CLEARANCE                    RECEIVED  
< WEATHER  
    REQUESTS  
< ETIS  
    REQUESTS  
< PIREPS                        CONFIGURE >  
                                 SYSTEM  
                                 RETURN >

*Figure A-28*

A T C U P L I N K N O . 1

T U R N L E F T H E A D I N G 2 4 0  
D E S C E N D A N D M A I N T A I N  
5 0 0 0 M S L .

- E N D O F M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-29*

### **A.3 ILS MISSED APPROACH WITH REROUTE**

Table A-3 and Figures A-30 through A-36 illustrate the sequence of events and page formats for those portions of the missed approach scenarios that differ from the normal ILS scenarios.

*Table A-3. ILS Missed Approach With Reroute*

<u>SCENARIO TIME</u> (SECONDS)	<u>COMMUNICATION EVENT</u>
870.4	ATC ADVISES PILOT REPORTED WIND SHEAR
882.0	ADVISES MISSED APPROACH AND REQUESTS HOLDING
928.0	ROUTE CLEARANCE TO HOLDING FIX

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MODE - S DATA LINK MENU

▷ < A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
< R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-30



A T C   U P L I N K   N O .   1

X X X X   Z ,   D C - 9   R E P O R T S  
A B R U P T   W I N D   S H E A R   A T  
1 5 0 0   M S L ,   O N   F I N A L  
R W 8 L ,   M A X   T H R U S T  
R E Q U I R E D .

- E N D   O F   M E S S A G E -


▷ < A C K N O W L E D G E

*Figure A-31*

MODE - S DATA LINK MENU

< A T C U P L I N K S F L T P L A N >  
P E N D I N G C H A N G E  
▷ < R E Q U E S T F O R U P L I N K S >  
C L E A R A N C E R E C E I V E D  
< W E A T H E R  
R E Q U E S T S  
< E T I S  
R E Q U E S T S  
< P I R E P S C O N F I G U R E >  
S Y S T E M  
R E T U R N >

Figure A-32

REQUEST FOR CLEARANCE  
  
 < PUSHBACK      KEEP    CURRENT >  
                          CLEARANCE  
 < REQUEST      MODIFY    FLIGHT >  
       FOR TAXI      PLAN    ROUTE  
 < INITIAL      MAKING    MISSED >   
       ROUTING                    APPROACH  
 < ALTITUDE                    FREE    TEXT >  
       REQUEST  
 < HEADING      RESUME    ORIG - >  
       REQUEST      INAL    ROUTE  
 < SPEED REQUEST              RETURN >

*Figure A-33*

	M I S S E D   A P P R O A C H		
	I N T E N T I O N S		
	< R E T U R N   F O R		
	A N O T H E R   A P P R	1	2      3
▷	< E N T E R   H O L D I N G		
	F O R <u>1</u> <u>5</u> M I N U T E S	4	5      6
		7	8      9
			0
		BKSP	
	CLR	ENT	

Figure A-34

MODE - S DATA LINK MENU

▶ < ATC UPLINKS                    FLT PLAN >  
    PENDING                        CHANGE  
< REQUEST FOR                    UPLINKS >  
    CLEARANCE                    RECEIVED  
< WEATHER  
    REQUESTS  
< ETIS  
    REQUESTS  
< PI REPS                        CONFIGURE >  
                                  SYSTEM  
                                  RETURN >

Figure A-35

A T C U P L I N K N O . 1

C L E A R E D T O M A C E Y  
I N T E R S E C T I O N V I A A H N  
R - 3 2 2 / 1 0 D M E F I X D I R -  
E C T M A C E Y . C L I M B A N D  
M A I N T A I N F L 1 8 0 . H O L D  
N . E . O F M A C E Y A S P U B -  
L I S H E D . E X P E C T F U R T H E R  
C L E A R A N C E X X X X Z U L U .  
- E N D O F M E S S A G E -

< U N A B L E

W I L C O >



*Figure A-36*

**APPENDIX B**  
**DETAILED MISSION SCENARIOS**

## **APPENDIX B**

This appendix presents the detailed crew procedures and tasks representing the scenarios which were analyzed in this study. Time in seconds is referenced to the beginning of the scenario, as in Appendix A. Both pilot and copilot tasking is presented, first for the conventional flight deck and then for the advanced flight deck. The VHF voice tasking is presented first, followed by the data link tasking for each crew member.

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**B.1 NORMAL ILS APPROACH—CONVENTIONAL FLIGHT DECK**

**Flying Pilot**

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**B5**

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\* UNSHIFTED \*  
\*\*\*\*\*

\*\*\*\*\*  
\* MISSION SCENARIO REPORT \*  
\* MISSION - CURRENT NAS \*  
\* ILS AP-BASE LN. \*  
\* CONFIGURATION - 737 CONVNT FLT DCK \*  
\* CREWMEMBER - PILOT \*  
\*\*\*\*\*

NOV10 1980

TIME INTERVAL (SECS) SINCE MISSION START BEGINNING END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK
0.00		100L BASELINE FFD ILS APP
0.00		100L01 CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET. ATL CENR HAS PREVIOUSLY INSTR UCTED NASA 616 TO CONTACT ATL APPR AT LOGEN. VHF-3R HAS AL- READY BEEN TUNED TO CORRECT FREQ-126.9.
0.00		100000 CONTACT ATL APPROACH ON 126.9
9.40 13.40	4.00	1P18YY90 NASA 616, ATL APPR, ROGER.
0.00		140003 ALTITUDE CHANGE PROC
0.00 10.00	10.00	4A 20 ACT FLT CONTROL TO CHANGE ALT
0.00 10.00	10.00	3L 02 MON VERTICAL SPEED INDIC
0.00 0.77	0.77	3H 02 MON CORR BARO ALT INDIC
0.00 10.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
0.00 2.82	2.82	4B 03 ACTUATE BOTH THROTTLES
0.00 2.37	2.37	3F 01 MON MACH NO INDIC
10.00		000030 FLIGHT INSTRUMENT SCAN - F
10.00 130.00	120.00	3R 07 MON PITCH ATTITUDE INDIC ON FDI
10.00 130.00	120.00	3L 03 MON VERTICAL SPEED INDIC
10.00 130.00	120.00	3A 11 MONITOR AIRSPEED INDIC
10.00 130.00	120.00	3B 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON C1
15.00		100013 SET NAV-1 TO RUNWAY 0L ILS -100.3
31.50 34.00	2.50	1P 12 MONITOR CALL-OUT
34.00 38.25	2.25	00 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
15.00		00EV30 PILOT EXT VIS SCAN
15.00 65.00	50.00	0A 12 PILOT EXTERNAL VISION SCAN
38.00		100030 SET ADF-1 TO CATT -375KC
45.73 47.23	1.50	1P 02 MONITOR CALL-OUT
48.00		100040 SET ADF-2 TO FLANC -344
54.00 55.50	1.50	1P 02 MONITOR CALL-OUT
58.00		100030 SET DECISION HEIGHT ON RADIO ALTIMETER
64.00		030007 ENGINE INSTRUMENT SCAN

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OF POOR QUALITY

SINCE MISSION START  
BEGINNING END

ACTIVITY  
TIME

EVENT/PROCEDURE  
TASK

65.00

16AA01 ADJUST THRUST AND  
PITCH TO MAINTAIN A  
900 FPM DESCENT AT  
250 KCAS USING PITCH  
CWS MODE OF A.P.  
PILOT HAS DETERMINED  
THAT THIS SHOULD  
PERMIT DECEL TO 210  
FOR CROSSING BAHRR  
AT 6000 FT.

65.00 67.73

2.73

48 07 MAKE MINOR THRUST  
ADJUSTMENT

65.00 70.00

3.00

4A 04 MANUALLY CONTROL A/C

70.00

160005 DESCENT AND APPROACH  
CHECKLIST - 1

70.00 72.00

2.00

1P160043 CALL OUT-(DESCENT  
AND APPROACH CHECK-  
LIST)

85.00 86.00

1.00

1P 10 MONITOR CALL-OUT

87.00 87.80

0.80

1P 07 MONITOR REPORT

90.00 91.80

1.80

1P 13 MONITOR CALL-OUT

98.00 98.40

0.40

1P 16 MONITOR REPORT

70.00

00EV33 PILOT EXT VIS SCAN

70.00 170.00

100.00

8A 13 PILOT EXTERNAL  
VISION SCAN

100.00

160006 DESCENT AND APPROACH  
CHECKLIST - 2

102.00 102.90

0.90

1P 11 MONITOR CALL-OUT

103.00 106.54

3.54

7M 03 SET ENG NO.1 START  
SW TO FLT

106.54 108.28

1.74

7M 08 SET ENG NO.2 START  
SW TO FLT

108.50 109.00

0.50

1P160048 CALL OUT (FLIGHT)

111.00 112.10

1.10

1P 12 MONITOR CALL-OUT

114.20 114.50

0.30

1P 16 MONITOR REPORT

116.50 117.90

1.40

1P 12 MONITOR CALL-OUT

123.40 124.70

1.30

1P 09 MONITOR REPORT

126.00

160007 DESCENT AND APPROACH  
CHECKLIST - 3

128.00 129.50

1.50

1P 02 MONITOR CALL-OUT

146.00 147.90

1.90

1P 14 MONITOR CALL-OUT

148.00 150.57

2.57

3A 07 MON V-REF BUG  
SETTING

148.00 150.57

2.57

3A 05 SET V-REF BUG

151.00 154.00

3.00

3A 13 CAPT CHECK F.O.<8  
V-REF BUG SETTING

154.00 155.80

1.80

1P 08 MONITOR REPORT

157.80 158.90

1.10

1P 02 MONITOR CALL-OUT

130.00

090019 FLIGHT INSTRUMENT  
SCAN - 9

130.00 190.00

60.00

3R 56 MON PITCH ATTITUDE  
INDIC ON FDI

130.00 190.00

60.00

3L 02 MON VERTICAL SPEED  
INDIC

130.00 190.00

60.00

3A 10 MONITOR AIRSPEED  
INDIC

130.00 190.00

60.00

3S 16 MONITOR A/C HEADING  
RELATIVE TO SELECTED  
HEADING ON CI

186.00

030007 ENGINE INSTRUMENT  
SCAN

130.00

00EV05 C/P EXT VIS SCAN

195.00

160048 MON ADF/RMI-2

195.00

160091 HANDOFF TO ATL FINAL  
APPROACH CONTROLLER

195.00 207.00

12.00

1P16XX81 N 515,TURN RT HDG270  
DESCND AND MAINTAIN  
6000 FT,CONTACT ATL  
APPR ON 127.25.

200.00

140007 HEADING CHANGE PROC.

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OF POOR QUALITY

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
200.00	210.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L 02 MON VERTICAL SPEED INDIC
200.00	204.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
205.00	215.00	10.00	3R 68 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			16BL02 BEGIN TURN TO DOWN- WIND LEG
210.00			16BL03 DESCEND THRU 11000.
215.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 5000 FT.
215.00	217.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A 84 MANUALLY CONTROL A/C
219.00			160092 TUNE ATL APPROACH ON 127.25
226.00			160093 CONTACT ATL APPROACH ON 127.25
231.90	235.90	4.00	1P18YY90 NASA 516, ATL APPR. ROGER.
220.00			090017 FLIGHT INSTRUMENT SCAN - C
220.00	250.00	30.00	3R 56 MON PITCH ATTITUDE INDIC ON FDI
220.00	250.00	30.00	3L 02 MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A 10 MONITOR AIRSPEED INDIC
220.00	250.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			00EV08 C/P EXT VIS SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
250.00	370.00	120.00	3R 57 MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00	120.00	3L 03 MON VERTICAL SPEED INDIC
250.00	370.00	120.00	3A 11 MONITOR AIRSPEED INDIC
250.00	370.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
268.00			030007 ENGINE INSTRUMENT SCAN
285.00			00EV08 C/P EXT VIS SCAN
330.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 5000 FT.
330.00	332.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
330.00	335.00	5.00	4A 84 MANUALLY CONTROL A/C

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
340.00			00EV04 C/P EXT VIS SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			18BL04 DESCEND THRU 8000.
370.00			160094 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94 NASA 816, DESCEND AND MAINTAIN 8000 FT.
370.00			090039 FLIGHT INSTRUMENT SCAN - F
370.00	490.00	120.00	3R 87 MON PITCH ATTITUDE INDIC ON FDI
370.00	490.00	120.00	3L 03 MON VERTICAL SPEED INDIC
370.00	490.00	120.00	3A 11 MONITOR AIRSPEED INDIC
370.00	490.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
385.00			00EV08 C/P EXT VIS SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
440.00			00EV03 C/P EXT VIS SCAN
450.00			160002 TUNE ATIS -119.85
458.00	482.00	24.00	1A 15 MON VHF-1 COMM AUDIO
458.00	481.42	3.42	1P160001 MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
481.42	485.98	4.56	1P160002 FIVE HUNDRED SCAT- TERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
485.98	470.54	4.56	1P160003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARAL- LEL APPROACHES IN
475.10	479.66	4.56	1P160005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CON- TROLLER ON INITIAL
479.66	481.94	2.28	1P160006 CONTACT YOU HAVE IN- FORMATION LIMA.]
480.00			160048 MON ADF/RMI-2
480.00			18BL05 CROSS FT MDB
485.00			00EV09 C/P EXT VIS SCAN
470.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 260 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 6000 FT.
470.00	472.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
470.00	475.00	5.00	4A 84 MANUALLY CONTROL A/C
480.00			160003 SET ALTIMETER BARO SETTING TO 39.84
480.00	483.50	3.50	1P 13 MONITOR CALL-OUT
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.85	2.85	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.85	2.85	3H 03 SET ALTIMETER BARO SETTING CONTROL

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
490.00			090017 FLIGHT INSTRUMENT SCAN - C
490.00	520.00	30.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
490.00	520.00	30.00	3L 02 MON VERTICAL SPEED INDIC
490.00	520.00	30.00	3A 10 MONITOR AIRSPEED INDIC
490.00	520.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON CI
513.00			030007 ENGINE INSTRUMENT SCAN
519.00			180041 MON VOR/RMI-1
519.00	521.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			180005 VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16XX95 NASA 515, TURN LEFT HEADING 180.
523.00			140007 HEADING CHANGE PROC.
523.00	533.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON CI
523.00	533.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDS
523.00	533.00	10.00	3L 02 MON VERTICAL SPEED INDIC
523.00	527.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
528.00	538.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
523.00			185L08 BEGIN TURN TO BASE
533.00			140007 HEADING CHANGE PROC.
533.00	543.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON CI
533.00	543.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDS
533.00	543.00	10.00	3L 02 MON VERTICAL SPEED INDIC
533.00	537.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
538.00	548.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
540.00			140023 REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70	1P 11 MONITOR CALL-OUT
543.00			140007 HEADING CHANGE PROC.
543.00	553.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON CI
543.00	553.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDS
543.00	553.00	10.00	3L 02 MON VERTICAL SPEED INDIC
543.00	547.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
548.00	558.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
550.00			00EV03 C/P EXT VIS SCAN
555.00			000003 FLIGHT INSTRUMENT SCAN - A
555.00	565.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
555.00	565.00	10.00	3L 02 MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A 10 MONITOR AIRSPEED INDIC
555.00	565.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
565.00			160041 MON VOR/RMI-1
565.00	567.00	2.00	5D 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00	5D 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042 MON ADF/RMI-1
569.00	571.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			160096 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P18XX96 NASA 516.12 MILES FROM OM, TURN LT HDG 110. MAINTAIN 8000 FT UNTIL CROSSING BAHRR
580.00	587.00	7.00	1P18ZZ96 CLEARED FOR ILS RUN- WAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			140007 HEADING CHANGE PROC.
575.00	585.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
575.00	585.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
575.00	585.00	10.00	3L 02 MON VERTICAL SPEED INDIC
575.00	579.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
580.00	590.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
575.00			168L07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007 HEADING CHANGE PROC.
585.00	595.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
585.00	595.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
585.00	595.00	10.00	3L 02 MON VERTICAL SPEED INDIC
585.00	589.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
590.00	600.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
597.00			160034 TUNE ATLANTA TOWER -119.5

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
600.00			180079 MON INSTRUMENTS ON FINAL APP - P
600.00	610.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
600.00	610.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
600.00	605.00	5.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
600.00	610.00	10.00	3A 10 MONITOR AIRSPEED INDIC
600.00	610.00	10.00	3H 06 MON ALTIMETER
600.00	610.00	10.00	3L 02 MON VERTICAL SPEED INDIC
607.00			180047 MON INSTRUMENTS ON FINAL APP
610.00			18AA02 SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BAHRR LEVEL AT 5000 FT
610.00	612.01	2.01	3R 45 SET FD MODE SEL TO AUTO APP
613.00	614.21	1.21	3V 05 MON VOR LOC ANNUN LT AMBER
620.00	622.92	2.92	3R 41 SET FD PITCH MODE SEL TO ALT HOLD
621.00	622.21	1.21	3V 03 MON ALT HOLD ANNUN LT ON
628.00	629.21	1.21	3V 04 MON ALT HOLD ANNUN LT OFF
610.00			140003 ALTITUDE CHANGE PROC
610.00	620.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE ALT
610.00	620.00	10.00	3L 02 MON VERTICAL SPEED INDIC
610.00	610.77	0.77	3H 02 MON CORR BARO ALT INDIC
610.00	620.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
610.00	612.82	2.82	4B 03 ACTUATE BOTH THROTTLES
610.00	612.37	2.37	3F 01 MON MACH NO INDIC
610.00			16BL08 LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180047 MON INSTRUMENTS ON FINAL APP
620.00			18AA03 ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BAHRR
620.00	622.50	2.50	4B 05 SET THRUST LEVERS TO IDLE
623.00			160037 CAPTURE ILS LOC BEGIN TURN TO Hdg 090
625.00	628.90	1.30	1P 02 MONITOR CALL-OUT
623.00	633.00	10.00	3R 16 MONITOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
623.00	633.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
623.00	633.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE Hdg
628.53	632.40	2.87	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
628.53	631.03	1.50	1P160058 CALL OUT-[I HAVE NAV 2 DATA]



SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
027.00	028.21	1.21	3V 08 MON LOC ANNUN LT GREEN AND GLD SLP AMBER
033.00	043.00	10.00	3R 10 MONITOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
033.00	043.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
033.00	043.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
027.00			100047 MON INSTRUMENTS ON FINAL APP
037.00			100047 MON INSTRUMENTS ON FINAL APP
043.00			100045 ANNUNCIATOR RECALL
043.00			100073 CONTROL A/C ON FINAL APPROACH - C (S)
045.00	050.00	5.00	4A 30 ACT FLT CONT TO ALIGN A/C WITH ATT INDICATORS
045.00			100079 MON INSTRUMENTS ON FINAL APP - P
045.00	055.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
045.00	055.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
045.00	050.00	5.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
045.00	055.00	10.00	3A 10 MONITOR AIRSPEED INDIC
045.00	055.00	10.00	3H 06 MON ALTIMETER
045.00	055.00	10.00	3L 02 MON VERTICAL SPEED INDIC
047.00			100047 MON INSTRUMENTS ON FINAL APP
050.00			100073 CONTROL A/C ON FINAL APPROACH - C (S)
050.00	055.00	5.00	4A 30 ACT FLT CONT TO ALIGN A/C WITH ATT INDICATORS
055.00			100041 MON VOR/RMI-1
055.00	057.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
055.00	057.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
057.00			100042 MON ADF/RMI-1
057.00	059.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
057.00	059.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
057.00			100048 MON ADF/RMI-2
060.00			100049 REACH 210 KCAS
060.00			100064 ACQUIRE GLIDESLOPE
062.00	064.58	2.58	3R 00 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
062.60	063.60	1.00	1P 10 MONITOR CALL-OUT
064.58	065.79	1.21	3V 09 MON GLIDE SLOPE ANNUN LT GREEN
064.00			100061 CONTACT TOWER FOR FINAL LANDING CLEAR- ANCE
074.40	081.40	7.00	1B 10 MON VHF-2 COMM AUDIO
074.40	078.40	4.00	1P100040 MON RADIO COMM - INASA 618, NO. 3 FOR SL DC-8 3 MI AHEAD. WIND 110
078.40	081.40	3.00	1P100041 AT NINE, CLEARED TO LAND RW 01.

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
664.00			16BL10 CROSS BARR
670.00			160072 CONTROL AIRCRAFT ON FINAL APP - B(240)
670.00	910.00	240.00	4A 30 ACT FLT CONT TO ALIGN/C WITH ATT INDICATORS
684.00			160011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160058 CALL OUT -[FLAPS 1]
689.00	689.70	0.70	1P 10 MONITOR CALL-OUT
691.00	691.44	0.44	7F 30 MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F 26 MON ENG NO 1 EPR IND
670.00			160080 MON INSTRUMENTS ON FINAL APP - P
670.00	700.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
670.00	700.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
670.00	700.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
670.00	700.00	30.00	3A 10 MONITOR AIRSPEED INDIC
670.00	700.00	30.00	3H 06 MON ALTIMETER
670.00	700.00	30.00	3L 02 MON VERTICAL SPEED INDIC
685.00			16BL11 REACH 180 KCAS
694.00			160017 SET FLAPS TO FLAPS 8
694.00	694.70	0.70	1P160061 CALL OUT -[FLAPS 8]
694.00			160018 FLAP SET PROCEDURE
700.03	700.73	0.70	1P 10 MONITOR CALL-OUT
701.00	701.44	0.44	7F 26 MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F 30 MON ENG NO 2 EPR IND
699.00			030007 ENGINE INSTRUMENT SCAN
700.00			160080 MON INSTRUMENTS ON FINAL APP - P
700.00	730.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
700.00	730.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
700.00	730.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
700.00	730.00	30.00	3A 10 MONITOR AIRSPEED INDIC
700.00	730.00	30.00	3H 06 MON ALTIMETER
700.00	730.00	30.00	3L 02 MON VERTICAL SPEED INDIC
708.00			16BL12 REACH 170 KCAS
710.00			160047 MON INSTRUMENTS ON FINAL APP
720.00			160047 MON INSTRUMENTS ON FINAL APP
730.00			160047 MON INSTRUMENTS ON FINAL APP
730.00			00EV21 PILOT EXT VIS SCAN
730.00	735.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
740.00			160069 SET SPEED BRAKES
740.00	743.28	3.28	4F 02 SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F 07 MONITOR SPEED BRAKE LEVER ARMED LT GREEN

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
744.00			160048 MON ADF/RMI-2
745.00			160060 MON INSTRUMENTS ON FINAL APP - P
745.00	775.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
745.00	775.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
745.00	775.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
745.00	775.00	30.00	3A 10 MONITOR AIRSPEED INDIC
745.00	775.00	30.00	3H 06 MON ALTIMETER
745.00	775.00	30.00	3L 02 MON VERTICAL SPEED INDIC
745.00			160113 CROSS REIFF
748.00			160070 SET AUTO BRAKES
755.00			00EV01 C/P EXT VIS SCAN
785.00			160047 MON INSTRUMENTS ON FINAL APP
775.00			160047 MON INSTRUMENTS ON FINAL APP
775.00			160060 MON INSTRUMENTS ON FINAL APP - P
775.00	805.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
775.00	805.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
775.00	805.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	805.00	30.00	3A 10 MONITOR AIRSPEED INDIC
775.00	805.00	30.00	3H 06 MON ALTIMETER
775.00	805.00	30.00	3L 02 MON VERTICAL SPEED INDIC
800.00			160058 REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10 MONITOR CALL-OUT
805.00			00EV21 PILOT EXT VIS SCAN
805.00	810.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
808.00			160018 FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10 MONITOR CALL-OUT
815.00	815.44	0.44	7F 25 MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30 MON ENG NO 2 EPR IND
808.00			160025 SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P160062 CALL OUT -(FLAPS 15)
812.00			160042 MON ADF/RMI-1
812.00	814.00	2.00	6D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 20 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160058 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160075 CALL OUT -(GEAR DOWN AND LANDING CHECK- LIST)
815.00	817.10	2.10	3H 03 START ELAPSED TIME INDIC

ORIGINAL PAGE IS  
OF POOR QUALITY

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME
815.00		
815.00		
820.00		
820.00		
820.00	850.00	30.00
820.00	850.00	30.00
820.00	850.00	30.00
820.00	850.00	30.00
820.00	850.00	30.00
820.00	850.00	30.00
845.00		
847.00	847.60	0.60
847.60	848.00	0.40
850.00	850.70	0.70
851.00	852.30	1.30
854.50	855.20	0.70
855.20	856.20	1.00
858.20	858.60	0.40
858.60	859.70	1.10
860.00		
860.00	865.00	5.00
866.00		
865.00	885.00	30.00
865.00	885.00	30.00
866.00	885.00	30.00
865.00	885.00	30.00
865.00	885.00	30.00
865.00	885.00	30.00
865.00		
877.00		
885.00		
885.00	890.00	5.00
889.00		
890.00		
890.00	920.00	30.00
890.00	920.00	30.00
890.00	920.00	30.00
890.00	920.00	30.00
890.00	920.00	30.00

EVENT/PROCEDURE TASK		
168L14	CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED	
160049	MON RADIO ALTIMETER	
160060	EXTEND LANDING GEAR	
160080	MON INSTRUMENTS ON FINAL APP - P	
3R	62 MONITOR LOCALIZER INDICATOR ON FDI	
3S	17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI	
3R	63 MON SLIDE SLOPE ATT INDIC ON FDI	
3A	10 MONITOR AIRSPEED INDIC	
3H	06 MON ALTIMETER	
3L	02 MON VERTICAL SPEED INDIC	
160062	LANDING CHECKLIST	
1P	10 MONITOR CALL-OUT	
1P	14 MONITOR CALL-OUT	
1P	10 MONITOR CALL-OUT	
1P160079	CALL OUT -(ARMED - GREEN LIGHT)	
1P	10 MONITOR CALL-OUT	
1P	10 MONITOR CALL-OUT	
1P	14 MONITOR CALL-OUT	
1P	12 MONITOR CALL-OUT	
00EV21	PILOT EXT VIS SCAN	
8A	10 PILOT EXTERNAL VISION SCAN	
160080	MON INSTRUMENTS ON FINAL APP - P	
3R	62 MONITOR LOCALIZER INDICATOR ON FDI	
3S	17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI	
3R	63 MON SLIDE SLOPE ATT INDIC ON FDI	
3A	10 MONITOR AIRSPEED INDIC	
3H	06 MON ALTIMETER	
3L	02 MON VERTICAL SPEED INDIC	
00EV02	C/P EXT VIS SCAN	
160047	MON INSTRUMENTS ON FINAL APP	
00EV21	PILOT EXT VIS SCAN	
8A	10 PILOT EXTERNAL VISION SCAN	
030007	ENGINE INSTRUMENT SCAN	
160080	MON INSTRUMENTS ON FINAL APP - P	
3R	62 MONITOR LOCALIZER INDICATOR ON FDI	
3S	17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI	
3R	63 MON SLIDE SLOPE ATT INDIC ON FDI	
3A	10 MONITOR AIRSPEED INDIC	
3H	06 MON ALTIMETER	

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
890.00	920.00	30.00	3L 02 MON VERTICAL SPEED INDIC
895.00			160049 MON RADIO ALTIMETER
900.00			00EV04 C/P EXT VIS SCAN
923.00			160065 DESCEND THRU -DECISION HEIGHT
925.38	926.38	0.80	1P 11 MONITOR CALL-OUT
924.00			160068 CONTROL AIRCRAFT THRU TOUCHDOWN
924.00	950.00	26.00	8A 06 CAPT VIEW THRU NO.1 WINDOW
924.00	950.00	26.00	4A 66 MANUALLY CONT A/C
925.00			160064 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00			090003 FLIGHT INSTRUMENT SCAN - A
930.00	940.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
930.00	940.00	10.00	3L 02 MON VERTICAL SPEED INDIC
930.00	940.00	10.00	3A 10 MONITOR AIRSPEED INDIC
930.00	940.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDB ON CI
940.00			160047 MON INSTRUMENTS ON FINAL APP
941.00			16BL16 CROSS RW THRESHOLD
950.00			00EV02 C/P EXT VIS SCAN
950.00			160068 TOUCHDOWN
950.00	952.50	2.50	4B 08 SET THRUST LEVERS TO IDLE
950.00	1025.00	75.00	4A 31 MANUALLY CONTROL A/C
952.50	973.50	21.00	4C 01 SET THRUST REVERSER LEVERS TO ON
974.00	976.76	2.76	4C 02 SET THRUST REVERSER LEVERS TO OFF
978.00	981.28	3.28	4F 01 SET SPD BRAKE LEVER TO DOWN
980.00	1025.00	75.00	4M 04 ACTUATE NOSE GEAR STEERING USING RUDDER PEDALS
980.00	1025.00	75.00	8A 01 VIEW RUNWAY AHEAD
980.00			16BL17 TOUCHDOWN
980.00			090003 FLIGHT INSTRUMENT SCAN - A
980.00	980.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
980.00	980.00	10.00	3L 02 MON VERTICAL SPEED INDIC
980.00	980.00	10.00	3A 10 MONITOR AIRSPEED INDIC
980.00	980.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDB ON CI
980.00			160047 MON INSTRUMENTS ON FINAL APP
970.00			00EV02 C/P EXT VIS SCAN
970.00			090003 FLIGHT INSTRUMENT SCAN - A

ORIGINAL PAGE IS  
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
970.00	980.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
970.00	980.00	10.00	3L 02 MON VERTICAL SPEED INDIC
970.00	980.00	10.00	3A 10 MONITOR AIRSPEED INDIC
970.00	980.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON C1
984.00			180071 HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1B 18 MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P180087 MON RADIO COMM - [NASA 518, EXIT RUN- WAY NEXT INTERSEC- TION. CONTACT GROUND
987.50	990.00	2.50	1P180088 POINT NINER WHEN CLEAR OF RUNWAY, OVER]
1004.00	1007.50	3.50	1B 18 MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P180091 MON RADIO COMM - [NASA 518, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST= SOUTH-
1007.50	1008.50	1.00	1P180092 WEST TAXIWAY, OVER]
990.00			080003 FLIGHT INSTRUMENT SCAN - A
990.00	1000.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
990.00	1000.00	10.00	3L 02 MON VERTICAL SPEED INDIC
990.00	1000.00	10.00	3A 10 MONITOR AIRSPEED INDIC
990.00	1000.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON C1
1010.00			00EV03 C/P EXT VIS SCAN

\*\*\*\*\*  
 \* UNSHIFTED \*  
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 \* MISSION SCENARIO REPORT \*  
 \* MISSION - MD-5 DATA LINK \*  
 \* ILS AP-BASE LN. \*  
 \* CONFIGURATION - 737 CONVNT FLT DCK \*  
 \* CREWMEMBER - PILOT \*  
 \*\*\*\*\*

NOV10 1986

TIME INTERVAL (SECS)  
 SINCE MISSION START  
 BEGINNING END

TOTAL  
 ACTIVITY  
 TIME

FLIGHT PHASE  
 EVENT/PROCEDURE  
 TASK

0.00		
0.00		
0.00		
0.00	10.00	10.00
0.00	10.00	10.00
0.00	0.77	0.77
0.00	10.00	10.00
0.00	2.82	2.82
0.00	2.37	2.37
10.00		
10.00	130.00	120.00
10.00	130.00	120.00
10.00	130.00	120.00
10.00	130.00	120.00
15.00		
31.50	34.00	2.50
34.00	36.25	2.25
15.00		
15.00	66.00	50.00
38.00		
46.73	47.23	1.50
48.00		
54.00	55.50	1.50
58.00		
64.00		
65.00		

18DL DATA LINK FFD ILS AP

18DL01	CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET. ATL CENTR HAS PREVIOUSLY INSTR UCTED NASA 515 TO MONITOR ATL APPROACH ON 120.9 AT LOGEN. VHF-2R HAS BEEN SET.
18DL90	MONITOR ATL APPROACH ON 120.9/VHF-2R
140003	ALTITUDE CHANGE PROC
4A	29 ACT FLT CONTROL TO CHANGE ALT
3L	02 MON VERTICAL SPEED INDIC
3H	02 MON CORR BARO ALT INDIC
3R	10 MON PITCH ATTITUDE INDIC ON FDI
4B	03 ACTUATE BOTH THROTTLES
3F	01 MON MACH NO INDIC
090039	FLIGHT INSTRUMENT SCAN - F
3R	57 MON PITCH ATTITUDE INDIC ON FDI
3L	03 MON VERTICAL SPEED INDIC
3A	11 MONITOR AIRSPEED INDIC
3S	15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
100013	SET NAV-1 TO RUNWAY 5L ILS -109.5
1P	12 MONITOR CALL-OUT
5Q	04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
00EV30	PILOT EXT VIS SCAN
0A	12 PILOT EXTERNAL VISION SCAN
100039	SET ADF-1 TO CATTA -375KC
1P	02 MONITOR CALL-OUT
100040	SET ADF-2 TO FLANC -344
1P	02 MONITOR CALL-OUT
100038	SET DECISION HEIGHT ON RADIO ALTIMETER
030007	ENGINE INSTRUMENT SCAN
18AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANAR AT 5000 FT.

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
85.00	87.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
88.00	70.00	8.00	4A 04 MANUALLY CONTROL A/C
70.00			180005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P180043 CALL OUT-(DESCENT AND APPROACH CHECK- LIST)
85.00	86.00	1.00	1P 10 MONITOR CALL-OUT
87.00	87.80	0.80	1P 07 MONITOR REPORT
90.00	91.80	1.80	1P 13 MONITOR CALL-OUT
98.00	98.40	0.40	1P 16 MONITOR REPORT
70.00			00EY33 PILOT EXT VIS SCAN
70.00	170.00	100.00	8A 18 PILOT EXTERNAL VISION SCAN
100.00			180006 DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P 11 MONITOR CALL-OUT
103.00	106.54	3.54	7M 03 SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M 06 SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P180048 CALL OUT [FLIGHT]
111.00	112.10	1.10	1P 12 MONITOR CALL-OUT
114.20	114.50	0.30	1P 16 MONITOR REPORT
116.50	117.90	1.40	1P 12 MONITOR CALL-OUT
123.40	124.70	1.30	1P 09 MONITOR REPORT
128.00			180007 DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02 MONITOR CALL-OUT
148.00	147.90	1.90	1P 14 MONITOR CALL-OUT
148.00	150.57	2.57	3A 07 MON V-REF BUG SETTING
148.00	150.57	2.57	3A 08 SET V-REF BUG
151.00	154.00	3.00	3A 18 CAPT CHECK F.O.<8 V-REF BUG SETTING
154.00	155.60	1.60	1P 08 MONITOR REPORT
157.80	158.90	1.30	1P 02 MONITOR CALL-OUT
130.00			090019 FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 18 MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02 MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10 MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 18 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON C1
165.00			030007 ENGINE INSTRUMENT SCAN
172.00			00EV03 C/P EXT VIS SCAN
195.00			180048 MON ADF/RMI-2
195.00			18DL91 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	198.80	1.80	1D18XX01 MON INFORMATION MANAGEMENT ATTENTION
198.80	198.80	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PROG] AMBER
200.40	210.40	10.00	1D18AA91 MONITOR UPLINK CALL- OUT FROM COPILOT
200.00			140007 HEADING CHANGE PROC.



SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
200.00	210.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L 02 MON VERTICAL SPEED INDIC
200.00	204.82	4.82	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
208.00	215.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			16BL02 BEGIN TURN TO DOWN- WIND LEG
210.00			16BL03 DESCEND THRU 11000.
215.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRAH AT 8000 FT.
215.00	217.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A 84 MANUALLY CONTROL A/C
219.00			160002 TUNE ATL APPROACH ON 127.25
226.00			16DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
220.00			090017 FLIGHT INSTRUMENT SCAN - C
220.00	250.00	30.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
220.00	250.00	30.00	3L 02 MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A 10 MONITOR AIRSPEED INDIC
220.00	250.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			00EV00 C/P EXT VIS SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
250.00	370.00	120.00	3R 57 MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00	120.00	3L 03 MON VERTICAL SPEED INDIC
250.00	370.00	120.00	3A 11 MONITOR AIRSPEED INDIC
250.00	370.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
288.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EV00 C/P EXT VIS SCAN
330.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRAH AT 8000 FT.
330.00	332.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
330.00	335.00	5.00	4A 84 MANUALLY CONTROL A/C
340.00			00EV04 C/P EXT VIS SCAN

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			16SL04 DESCEND THRU 8000.
370.00			16DL94 ALTITUDE STEP DOWN
370.00	371.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
371.80	373.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
375.40	379.40	4.00	1D16AA94 MONITOR UPLINK CALL- OUT FROM COPILOT
370.00			090039 FLIGHT INSTRUMENT SCAN - F
370.00	490.00	120.00	3R 67 MON PITCH ATTITUDE INDIC ON FDI
370.00	490.00	120.00	3L 03 MON VERTICAL SPEED INDIC
370.00	490.00	120.00	3A 11 MONITOR AIRSPEED INDIC
370.00	490.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
385.00			00EY08 C/P EXT VIS SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
450.00			16DL02 RECEIVE ATL ETIS TERMINAL INFORMATION
458.80	460.20	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
480.20	482.20	2.00	1D16XX08 MON VISUAL ALERT DSP (MODE-S UPLINK PROG) INDENTED BLUE
480.00			16SL05 CROSS FT NDB
470.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 260 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANNA AT 5000 FT.
470.00	472.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
470.00	475.00	5.00	4A 84 MANUALLY CONTROL A/C
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P 13 MONITOR CALL-OUT
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.85	2.85	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.85	2.85	3H 03 SET ALTIMETER BARO SETTING CONTROL
490.00			090017 FLIGHT INSTRUMENT SCAN - C
490.00	520.00	30.00	3R 66 MON PITCH ATTITUDE INDIC ON FDI
490.00	520.00	30.00	3L 02 MON VERTICAL SPEED INDIC
490.00	520.00	30.00	3A 10 MONITOR AIRSPEED INDIC
490.00	520.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
513.00			030007 ENGINE INSTRUMENT SCAN
519.00			160041 MON VOR/RMI-1
519.00	521.00	2.00	6G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	6G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			16DL95 VECTOR FOR BASE LEG

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
\$20.00	\$21.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
\$21.60	\$23.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PHDG) AMBER
\$25.40	\$28.40	3.00	1D16AA96 MONITOR UPLINK CALL- OUT FROM COPILOT
\$23.00			140007 HEADING CHANGE PROC.
\$23.00	\$33.00	10.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
\$23.00	\$33.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
\$23.00	\$33.00	10.00	3L 02 MON VERTICAL SPEED INDIC
\$23.00	\$27.92	4.92	38 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
\$29.00	\$38.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
\$23.00			16BL06 BEGIN TURN TO BASE
\$33.00			140007 HEADING CHANGE PROC.
\$33.00	\$43.00	10.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
\$33.00	\$43.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
\$33.00	\$43.00	10.00	3L 02 MON VERTICAL SPEED INDIC
\$33.00	\$37.92	4.92	38 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
\$38.00	\$48.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
\$40.00			140023 REPORT 1000 FT TO LEVEL OFF
\$42.00	\$43.70	1.70	1P 11 MONITOR CALL-OUT
\$43.00			140007 HEADING CHANGE PROC.
\$43.00	\$53.00	10.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
\$43.00	\$53.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
\$43.00	\$53.00	10.00	3L 02 MON VERTICAL SPEED INDIC
\$43.00	\$47.92	4.92	38 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
\$48.00	\$58.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
\$50.00			00EV03 C/P EXT VIS SCAN
\$55.00			000003 FLIGHT INSTRUMENT SCAN - A
\$55.00	\$65.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
\$55.00	\$65.00	10.00	3L 02 MON VERTICAL SPEED INDIC
\$55.00	\$65.00	10.00	3A 10 MONITOR AIRSPEED INDIC
\$55.00	\$65.00	10.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
\$55.00			160041 MON VOR/RMI-1
\$65.00	\$67.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
565.00	567.00	2.00	5B 05 MON YOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042 MON ADF/RMI-1
569.00	571.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			16DL96 VECTOR TO FINAL APPR
570.00	571.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
571.00	573.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
575.40	584.40	9.00	1D16AA96 MONITOR UPLINK CALL- OUT FROM COPILOT
584.40	591.40	7.00	1D16AA97 MONITOR UPLINK CALL- OUT FROM COPILOT
575.00			140007 HEADING CHANGE PROC.
575.00	585.00	10.00	3B 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
575.00	585.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
575.00	585.00	10.00	3L 02 MON VERTICAL SPEED INDIC
575.00	579.92	4.92	3B 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
580.00	590.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007 HEADING CHANGE PROC.
585.00	595.00	10.00	3B 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
585.00	595.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
585.00	595.00	10.00	3L 02 MON VERTICAL SPEED INDIC
585.00	589.92	4.92	3B 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
590.00	600.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
597.00			160034 TUNE ATLANTA TOWER -119.5
600.00			160079 MON INSTRUMENTS ON FINAL APP - P
600.00	610.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
600.00	610.00	10.00	3B 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
600.00	605.00	5.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
600.00	610.00	10.00	3A 10 MONITOR AIRSPEED INDIC
600.00	610.00	10.00	3H 06 MON ALTIMETER
600.00	610.00	10.00	3L 02 MON VERTICAL SPEED INDIC
607.00			160047 MON INSTRUMENTS ON FINAL APP

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
010.00			16AA02 SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BAHRR, LEVEL AT 5000 FT
010.00	012.01	2.01	3R 48 SET FD MODE SEL TO AUTO APP
013.00	014.21	1.21	3V 05 MON VOR LOC ANNUN LT AMBER
020.00	022.92	2.92	3R 41 SET FD PITCH MODE SEL TO ALT HOLD
021.00	022.21	1.21	3V 03 MON ALT HOLD ANNUN LT ON
059.00	059.21	1.21	3V 04 MON ALT HOLD ANNUN LT OFF
010.00			140003 ALTITUDE CHANGE PROC
010.00	020.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
010.00	020.00	10.00	3L 02 MON VERTICAL SPEED INDIC
010.00	010.77	0.77	3H 02 MON CORR BARO ALT INDIC
010.00	020.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
010.00	012.92	2.92	4B 03 ACTUATE BOTH THROTTLES
010.00	012.37	2.37	3F 01 MON MACH NO INDIC
010.00			16BL08 LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
017.00			160047 MON INSTRUMENTS ON FINAL APP
020.00			16AA03 ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BAHRR
020.00	022.50	2.50	4B 08 SET THRUST LEVERS TO IDLE
023.00			160037 CAPTURE ILS LOC BEGIN TURN TO HDB 090
025.00	026.90	1.90	1P 02 MONITOR CALL-OUT
023.00	033.00	10.00	3R 10 MONITOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
023.00	033.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
023.00	033.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDB
029.53	032.40	2.87	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
029.53	031.03	1.50	1P160068 CALL OUT-[I HAVE NAV 2 DATA]
027.00	028.21	1.21	3V 06 MON LOC ANNUN LT GREEN AND GLD SLP AMBER
033.00	043.00	10.00	3R 10 MONITOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
033.00	043.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
033.00	043.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDB
027.00			160047 MON INSTRUMENTS ON FINAL APP
037.00			160047 MON INSTRUMENTS ON FINAL APP
043.00			160045 ANNUNCIATOR RECALL
045.00			160073 CONTROL A/C ON FINAL APPROACH - C (18)

ORIGINAL PAGE IS  
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
045.00	050.00	5.00	4A 30 ACT FLT CONT TO ALIGN/A/C WITH ATT INDICATORS
045.00			100070 MON INSTRUMENTS ON FINAL APP - P
045.00	055.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
045.00	055.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
045.00	060.00	5.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
045.00	065.00	10.00	3A 10 MONITOR AIRSPEED INDIC
045.00	065.00	10.00	3H 06 MON ALTIMETER
045.00	065.00	10.00	3L 02 MON VERTICAL SPEED INDIC
047.00			100047 MON INSTRUMENTS ON FINAL APP
050.00			100073 CONTROL A/C ON FINAL APPROACH - C (S)
050.00	055.00	5.00	4A 30 ACT FLT CONT TO ALIGN/A/C WITH ATT INDICATORS
055.00			100041 MON VOR/RMI-1
055.00	057.00	2.00	5Q 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
055.00	057.00	2.00	5Q 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
057.00			100042 MON ADF/RMI-1
057.00	059.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
057.00	059.00	2.00	5D 28 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
057.00			100048 MON ADF/RMI-2
060.00			100100 REACH 210 KCAS
060.00			100054 ACQUIRE GLIDESLOPE
062.00	064.58	2.58	3R 00 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
062.60	063.80	1.00	1P 10 MONITOR CALL-OUT
064.58	065.79	1.21	3V 00 MON GLIDE SLOPE ANNUN LT GREEN
064.00			100160 MONITOR ATL TOWER ON 119.5/VHF-2R
064.00			100110 CROSS BARR
070.00			100161 LANDING CLEARANCE
070.00	071.60	1.60	1D10XX01 MON INFORMATION MANAGEMENT ATTENTION
071.60	073.80	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PRDG] AMBER
075.40	085.40	10.00	1D10AA40 MONITOR UPLINK CALL- OUT FROM COPILOT
070.00			100072 CONTROL AIRCRAFT ON FINAL APP - B12401
070.00	090.00	240.00	4A 30 ACT FLT CONT TO ALIGN/A/C WITH ATT INDICATORS
084.00			100011 SET FLAPS TO FLAPS 1
084.00	084.70	0.70	1P100058 CALL OUT -[FLAPS 1]
089.00	089.70	0.70	1P 10 MONITOR CALL-OUT
091.00	091.44	0.44	7F 30 MON ENG NO 2 EPR IND
091.00	091.44	0.44	7F 25 MON ENG NO 1 EPR IND
070.00			100060 MON INSTRUMENTS ON FINAL APP - P

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
670.00	700.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
670.00	700.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
670.00	700.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
670.00	700.00	30.00	3A 10 MONITOR AIRSPEED INDIC
670.00	700.00	30.00	3H 06 MON ALTIMETER
670.00	700.00	30.00	3L 02 MON VERTICAL SPEED INDIC
685.00			18BL11 REACH 190 KCAS
694.00			160017 SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160061 CALL OUT -CLAPS 51
694.00			160018 FLAP SET PROCEDURE
700.03	700.73	0.70	1P 10 MONITOR CALL-OUT
701.00	701.44	0.44	7F 28 MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F 30 MON ENG NO 2 EPR IND
699.00			030007 ENGINE INSTRUMENT SCAN
700.00			160080 MON INSTRUMENTS ON FINAL APP - P
700.00	730.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
700.00	730.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
700.00	730.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
700.00	730.00	30.00	3A 10 MONITOR AIRSPEED INDIC
700.00	730.00	30.00	3H 06 MON ALTIMETER
700.00	730.00	30.00	3L 02 MON VERTICAL SPEED INDIC
706.00			16BL12 REACH 170 KCAS
710.00			160047 MON INSTRUMENTS ON FINAL APP
720.00			160047 MON INSTRUMENTS ON FINAL APP
730.00			160047 MON INSTRUMENTS ON FINAL APP
730.00			00EV21 PILOT EXT VIS SCAN
730.00	735.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
740.00			160069 SET SPEED BRAKES
740.00	743.26	3.26	4F 02 SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F 07 MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			160048 MON ADF/RMI-2
745.00			160080 MON INSTRUMENTS ON FINAL APP - P
745.00	775.00	30.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
745.00	775.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
745.00	775.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
745.00	775.00	30.00	3A 10 MONITOR AIRSPEED INDIC
745.00	775.00	30.00	3H 06 MON ALTIMETER
745.00	775.00	30.00	3L 02 MON VERTICAL SPEED INDIC
745.00			16BL13 CROSS REIFF

SINCE MISSION START  
BEGINNING END

ACTIVITY  
TIME

EVENT/PROCEDURE  
TASK

748.00

755.00

768.00

775.00

775.00

775.00 805.00

30.00

775.00 805.00

30.00

775.00 805.00

30.00

775.00 805.00

30.00

775.00 805.00

30.00

775.00 805.00

30.00

800.00

802.00 803.00

1.00

805.00

805.00 810.00

5.00

808.00

814.03 814.73

0.70

815.00 815.44

0.44

815.44 815.88

0.44

808.00

808.00 808.70

0.70

812.00

812.00 814.00

2.00

812.00 814.00

2.00

815.00

815.00 816.72

0.72

817.00 818.80

1.80

815.00 817.10

2.10

815.00

815.00

820.00

820.00

820.00 850.00

30.00

820.00 850.00

30.00

820.00 850.00

30.00

820.00 850.00

30.00

820.00 850.00

30.00

ORIGINAL PAGE IS  
OF POOR QUALITY

160070 SET AUTO BRAKES

00EV01 C/P EXT VIS SCAN

160047 MON INSTRUMENTS ON  
FINAL APP

160047 MON INSTRUMENTS ON  
FINAL APP

160080 MON INSTRUMENTS ON  
FINAL APP - P

3R 02 MONITOR LOCALIZER  
INDICATOR ON FDI

3S 17 MON A/C HEADING  
RELATIVE TO SELECTED  
COURSE ON CI

3R 03 MON GLIDE SLOPE  
ATT INDIC ON FDI

3A 10 MONITOR AIRSPEED  
INDIC

3H 06 MON ALTIMETER

3L 02 MON VERTICAL SPEED  
INDIC

160058 REPORT RUNWAY IN  
SIGHT

1P 10 MONITOR CALL-OUT

00EV21 PILOT EXT VIS SCAN

0A 10 PILOT EXTERNAL  
VISION SCAN

160018 FLAP SET PROCEDURE

1P 10 MONITOR CALL-OUT

7F 25 MON ENG NO 1 EPR IND

7F 30 MON ENG NO 2 EPR IND

160025 SET FLAPS TO FLAPS  
15

1P160062 CALL OUT -[FLAPS 15]

160042 MON ADF/RMI-1

5D 28 MON ADF POINTER NO.1  
ON ADF/RMI 1 INDIC

5D 29 MON ADF POINTER NO.2  
ON ADF/RMI 1 INDIC

160059 CROSS RWY 08 OUTER  
MARKER

3V 11 MONITOR OUTER MARKER  
LT ON AND AUDIBLE  
SIGNAL

1P160075 CALL OUT -[GEAR DOWN  
AND LANDING CHECK-  
LIST]

3H 08 START ELAPSED TIME  
INDIC

160114 CROSS CATTA LOW-GEAR  
THEN EXTENDED AND  
155 KCAS MAINTAINED

160049 MON RADIO ALTIMETER

160080 EXTEND LANDING GEAR

160080 MON INSTRUMENTS ON  
FINAL APP - P

3R 02 MONITOR LOCALIZER  
INDICATOR ON FDI

3S 17 MON A/C HEADING  
RELATIVE TO SELECTED  
COURSE ON CI

3R 03 MON GLIDE SLOPE  
ATT INDIC ON FDI

3A 10 MONITOR AIRSPEED  
INDIC

3H 06 MON ALTIMETER



SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
820.00	850.00	30.00	3L 02 MON VERTICAL SPEED INDIC
845.00			180082 LANDING CHECKLIST
847.00	847.60	0.60	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P180079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT
856.60	856.70	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV21 PILOT EXT VIS SCAN
860.00	866.00	6.00	8A 10 PILOT EXTERNAL VISION SCAN
855.00			180080 MON INSTRUMENTS ON FINAL APP - P
855.00	885.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
855.00	885.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
855.00	885.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
855.00	885.00	30.00	3A 10 MONITOR AIRSPEED INDIC
855.00	885.00	30.00	3H 08 MON ALTIMETER
855.00	885.00	30.00	3L 02 MON VERTICAL SPEED INDIC
885.00			00EV02 C/P EXT VIS SCAN
877.00			180047 MON INSTRUMENTS ON FINAL APP
885.00			00EV21 PILOT EXT VIS SCAN
885.00	890.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
889.00			030007 ENGINE INSTRUMENT SCAN
890.00			180080 MON INSTRUMENTS ON FINAL APP - P
890.00	920.00	30.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
890.00	920.00	30.00	3S 17 MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
890.00	920.00	30.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
890.00	920.00	30.00	3A 10 MONITOR AIRSPEED INDIC
890.00	920.00	30.00	3H 08 MON ALTIMETER
890.00	920.00	30.00	3L 02 MON VERTICAL SPEED INDIC
895.00			180049 MON RADIO ALTIMETER
900.00			00EV04 C/P EXT VIS SCAN
923.00			180065 DESCEND THRU -DECISION HEIGHT
925.58	926.38	0.80	1P 11 MONITOR CALL-OUT
924.00			180066 CONTROL AIRCRAFT THRU TOUCHDOWN
924.00	960.00	26.00	8A 08 CAPT VIEW THRU NO.1 WINDOW
924.00	960.00	26.00	4A 08 MANUALLY CONT A/C
925.00			180064 CROSS RWY 08 MIDDLE MARKER

SINCE MISSION BEGINNING	START END	ACTIVITY TIME
925.00	926.91	1.91
928.00		
930.00		
930.00		
930.00	940.00	10.00
930.00	940.00	10.00
930.00	940.00	10.00
930.00	940.00	10.00
940.00		
941.00		
950.00		
950.00		
950.00	952.50	2.50
950.00	1025.00	75.00
952.50	973.50	21.00
974.00	976.76	2.76
978.00	991.26	3.26
980.00	1025.00	75.00
980.00	1025.00	75.00
980.00		
980.00		
980.00	980.00	10.00
980.00	980.00	10.00
980.00	980.00	10.00
980.00	980.00	10.00
980.00		
970.00		
970.00		
970.00	980.00	10.00
970.00	980.00	10.00
970.00	980.00	10.00
970.00	980.00	10.00
984.00		
984.00	985.60	1.60
985.60	987.80	2.20

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
088.40	097.40	9.00	1D16AA87 MONITOR UPLINK CALL- OUT FROM COPILOT
090.00			000003 FLIGHT INSTRUMENT SCAN - A
090.00	1000.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
090.00	1000.00	10.00	3L 02 MON VERTICAL SPEED INDIC
090.00	1000.00	10.00	3A 10 MONITOR AIRSPEED INDIC
090.00	1000.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDB ON CI
1000.00			16DL72 TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L
1009.00			16DL73 TAXI CLEARANCE FROM
1009.00	1010.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
1010.00	1012.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
1014.40	1019.40	5.00	1D16AA88 MONITOR UPLINK CALL- OUT FROM COPILOT
1020.00			00EV01 C/P EXT VIS SCAN

## **B.2 NORMAL ILS APPROACH—CONVENTIONAL FLIGHT DECK**

### **Nonflying Pilot**

\*\*\*\*\*  
 \* UNSHIFTED \*  
 \*\*\*\*\*

\*\*\*\*\*  
 \* MISSION SCENARIO REPORT \*  
 \* MISSION - CURRENT HAS \*  
 \* ILS AP-BASE LN. \*  
 \* CONFIGURATION - 737 CONVNT FLT DCK \*  
 \* CREWMEMBER - COPILOT \*  
 \*\*\*\*\*

NOV10 1988

TIME INTERVAL (SECS)  
 SINCE MISSION START  
 BEGINNING END

TOTAL  
 ACTIVITY  
 TIME

FLIGHT PHASE  
 EVENT/PROCEDURE  
 TASK

0.00  
 0.00

188L BASELINE FPD ILS APP

188L01 CROSS LOGEN INTERSEC  
 TION AT 250 KCAS AND  
 14000 FEET. ATL CENTR  
 HAS PREVIOUSLY INSTR  
 UCTED NASA 516 TO  
 CONTACT ATL APPR AT  
 LOGEN. VHF-SR HAS AL-  
 READY BEEN TUNED TO  
 CORRECT FREQ-128.9.

180090 CONTACT ATL APPROACH  
 ON 128.9

1B 08 SET VHF-2 COMM TFR  
 SW TO RIGHT

1A 25 ACTUATE COMM 2 PUSH-  
 TO-TALK SW

1P18XX90 ATL APP, NASA 516 DES  
 CENDING TO 11000 FT  
 WITH INFO LIMA.

1P18YY90 NASA 516, ATL APPR.  
 ROGER.

140003 ALTITUDE CHANGE PROC

080039 FLIGHT INSTRUMENT  
 SCAN - F

180013 SET NAV-1 TO RUNWAY  
 8L ILS -109.3

8B 08 RETREIVE CHARTS

8B180003 REVIEW CHARTS TO  
 DETERMINE RUNWAY 08  
 ILS FREQ AND REQ VOR  
 FREQ

8U 01 MON NAV-1 FREQ INDIC

8U 02 SET NAV-1 FREQ -  
 WHOLE NO.8

8U 03 SET NAV-1 FREQ -  
 FRACTIONS

1P180088 CALL OUT -(RUNWAY 8L  
 ILS IS ON NAV 1)

8H 02 MON VOR POINTER NO.1  
 ON VOR/RMI 2 INDIC

00EV30 PILOT EXT VIS SCAN

180039 SET ADF-1 TO CATTA  
 -378KC

8D 17 SET ADF NO.1 BFO SW  
 TO OFF

8D 22 MON ADF NO.1 TUNING  
 METER INDIC

8D 01 MONITOR ADF NO 1  
 FREQ INDIC

8D 02 SELECT ADF NO 1 FREQ  
 INDIC

1P180088 CALL OUT -(CATTA  
 ON ADF-1)

180040 SET ADF-2 TO FLANC  
 -344

8E 17 SEL ADF NO.2 FREQ  
 BAND .18-.40

8E 01 MON ADF NO 2 FREQ.  
 INDIC

8E 02 SELECT ADF NO 2 FREQ

0.00

0.00

1.45

1.45

2.40 9.40

7.00

2.40 9.40

7.00

9.40 13.40

4.00

0.00

10.00

15.00

15.00 21.00

8.00

21.00 26.00

5.00

26.00 31.08

5.08

26.00 29.00

3.00

29.00 31.08

2.08

31.50 34.40

2.90

31.50 33.77

2.27

15.00

38.00

38.00 41.00

3.00

41.00 41.77

0.77

41.77 43.75

1.98

43.75 45.73

1.98

45.73 47.23

1.50

49.00

49.00 51.89

2.89

52.00 53.98

1.98

52.00 53.98

1.98

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B35

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
52.00	54.28	2.28	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P180066 CALL OUT -(FLANC ON ADF-2)
58.00			180038 SET DECISION HEIGHT ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 25 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
68.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHAR AT 8000 FT.
70.00			180005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.80	5.80	08 02 RETREIVE CHECKLIST
78.00	83.00	5.00	08 05 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	08 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P180044 CALL OUT-(ANTI-ICE)
87.00	87.80	0.80	1P180046 CALL OUT-(NOT REQD)
88.00	90.00	2.00	08 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P180048 CALL OUT -(AIR CON- DITIONING AND PRES- SURIZATION)
92.00	94.67	2.67	7D 68 MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E 68 MON LDG ALT CNTR
98.00	98.40	0.40	1P180047 CALL OUT (SET)
70.00			00EV33 PILOT EXT VIS SCAN

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME
100.00		
100.00	102.00	2.00
102.00	102.90	0.90
108.50	108.00	0.50
109.00	111.00	2.00
111.00	112.10	1.10
112.00	114.20	2.20
114.20	114.50	0.30
114.50	118.50	2.00
118.50	117.90	1.40
118.00	120.37	2.37
120.37	123.37	3.00
123.40	124.70	1.30
128.00		
128.00	128.00	2.00
128.00	128.50	1.50
128.00	131.00	3.00
131.00	138.00	5.00
138.00	138.32	2.32
138.32	138.32	2.00
138.32	140.84	2.32
138.84	140.84	2.00
141.00	146.00	5.00
146.00	148.57	2.57
148.00	148.57	2.57
148.00	147.90	1.90
151.00	164.00	3.00
154.00	155.80	1.80
155.80	157.80	2.00
158.80	158.90	1.30
157.80	160.80	3.00
160.80	162.80	2.00
130.00		
165.00		
165.00	165.44	0.44
165.00	165.44	0.44
165.44	165.88	0.44
165.44	165.88	0.44

EVENT/PROCEDURE TASK		
160006	DESCENT AND APPROACH CHECKLIST - 2	
8B	03	READ NEXT ITEM ON CHECKLIST
1P160046		CALL OUT-[START SWITCHES]
1P	06	MONITOR REPORT
8B	03	READ NEXT ITEM ON CHECKLIST
1P160050		CALL OUT-[INBOARD LANDING LIGHTS]
7B	17	SET LANDING LIGHTS SW TO ON
1P160051		CALL OUT -[ON]
8B	03	READ NEXT ITEM ON CHECKLIST
1P160052		CALL OUT -[ALTITUDE AND INSTRUMENTS]
3H	02	MON CORR BARO ALT INDIC
3H	05	F.O. CHECK CAPT'S ALTITUDE BARO SET AND INDICATED ALTI- TITUDE
1P160053		CALL OUT-[SET AND CROSSCHECKED]
160007	DESCENT AND APPROACH CHECKLIST - 3	
8B	03	READ NEXT ITEM ON CHECKLIST
1P160054		CALL OUT-[EPR AND IAS BUGS]
8B010004		RETRIEVE FLIGHT PLANNING REF. DATA MANUAL
8B160001		DETERMINE GO-AROUND EPR BUG SET VALUE
7F	26	SET ENG NO 1 EPR BUG
7F	27	MON ENG NO 1 EPR BUG
7F	28	SET ENG NO 2 EPR BUG
7F	29	MON ENG NO 2 EPR BUG
8B160002		DETERMINE LANDING V-REF BUG SET VALUE
3A	07	MON V-REF BUG SETTING
3A	05	SET V-REF BUG
1P160055		CALL OUT -[V-REF IS XXX KNOTS]
3A	12	F.O. CHECK CAPT'S V-REF BUG SETTING
1P160056		CALL OUT -[BUGS SET AND CROSS-CHECKED]
8B	03	READ NEXT ITEM ON CHECKLIST
1P160057		CALL OUT -[CHECKLIST COMPLETED]
8B	06	STOW CHECKLIST
8B010005		STOW FLIGHT PLANNING REF. DATA MANUAL
090019	FLIGHT INSTRUMENT SCAN - D	
090007	ENGINE INSTRUMENT SCAN	
7F	25	MON ENG NO 1 EPR IND
7F	30	MON ENG NO 2 EPR IND
7F	21	MON NO 1 ENG N1 IND
7F	22	MON NO 2 ENG N1 IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	8A 11 PILOT EXTERNAL VISION SCAN
195.00			160048 MON ADF/RMI-2
195.00	197.28	2.28	6E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			160091 HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX91 N 515, TURN RT HDG 270 DESCND AND MAINTAIN 8000 FT, CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 26 ACTUATE COMM 2 PUSH- TO-TALK SW
207.00	214.00	7.00	1P16YY01 515, ROGER, HDG 270, MAINTAIN 8000, APPR ON 127.25.
200.00			140007 HEADING CHANGE PROC.
200.00			16BL02 BEGIN TURN TO DOWN- WIND LEG
210.00			16BL03 DESCEND THRU 11000.
215.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 8000 FT.
219.00			160092 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.3
221.88	223.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
226.00			160093 CONTACT ATL APPROACH ON 127.25
226.00	227.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
226.40	231.90	5.50	1A 10 ACT PUSH-TO-TALK SW
226.40	231.90	5.50	1P16XX93 ATL APPR, NASA 515 DESCENDING TO 8000.
231.90	235.90	4.00	1P16YY00 NASA 515, ATL APPR, ROGER.



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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
220.00			090017 FLIGHT INSTRUMENT SCAN - C
240.00			00EV09 C/P EXT VIS SCAN
240.00	285.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXN GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
298.00			00EV09 C/P EXT VIS SCAN
298.00	340.00	42.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CMD MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANAR AT 6000 FT.
340.00			00EV04 C/P EXT VIS SCAN
340.00	380.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
383.00			030007 ENGINE INSTRUMENT SCAN
383.00	383.44	0.44	7F 25 MON ENG NO 1 EPR IND
383.00	383.44	0.44	7F 30 MON ENG NO 2 EPR IND
383.44	383.88	0.44	7F 21 MON NO 1 ENG N1 IND
383.44	383.88	0.44	7F 22 MON NO 2 ENG N1 IND
383.88	384.32	0.44	7F 31 MON ENG NO 1 EXN GAS TEMP IND
383.88	384.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
384.32	384.76	0.44	7F 23 MON NO 1 ENG N2 IND
384.32	384.76	0.44	7F 24 MON NO 2 ENG N2 IND
384.76	385.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			168L04 DESCEND THRU 6000.
370.00			160094 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94 NASA 515, DESCEND AND MAINTAIN 6000 FT.
375.00	375.50	3.50	1A 10 ACT PUSH-TO-TALK SW
375.00	375.50	3.50	1P16YY94 515, ROGER, MAINTAIN 6000.
370.00			090039 FLIGHT INSTRUMENT SCAN - F
385.00			00EV08 C/P EXT VIS SCAN
385.00	425.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03 C/P EXT VIS SCAN
440.00	455.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
450.00			160002 TUNE ATIS -119.65
450.00	454.96	4.96	1A 07 MON VHF-1R FREQ IND

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
450.00	452.01	2.01	1A 08 SET VHF-1R FREQ. WHOLE NO.8 FRACTIONS
455.00	457.39	2.39	1A 08 SET VHF-1 COMM TFR SW TO RIGHT
458.43	457.95	1.52	1A 17 SET COMM 2 VHF-1 COMM RECVR SW TO ON
458.00	462.00	24.00	1A 18 MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001 MON RADIO COMM - (INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
481.42	485.98	4.56	1P160002 FIVE HUNDRED SCAT- TERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
485.98	470.54	4.56	1P160003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARAL- LEL APPROACHES IN
475.10	479.88	4.56	1P160005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CON- TROLLER ON INITIAL
479.88	481.94	2.28	1P160006 CONTACT YOU HAVE IN- FORMATION LIMA.)
480.00			160048 MON ADF/RMI-2
480.00	482.26	2.26	SE 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
480.00			168L05 CROSS FT MDS
485.00			00EV09 C/P EXT VIS SCAN
485.00	510.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
470.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 200 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANRR AT 5800 FT.
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043 CALL OUT-(DESCENT AND APPROACH CHECK- LIST)
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL
490.00			090017 FLIGHT INSTRUMENT SCAN - C
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXN GAS TEMP IND
513.88	514.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
\$14.32	\$14.78	0.44	7F 24 MON NO 2 ENG N2 IND
\$14.78	\$15.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
\$14.78	\$15.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
\$15.20	\$16.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
\$15.64	\$16.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
\$16.64	\$16.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
\$16.08	\$16.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
\$16.08	\$16.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
\$16.52	\$16.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
\$16.52	\$16.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
\$19.00			180041 MON VOR/RMI-1
\$20.00			180006 VECTOR FOR BASE LEG FROM ATL APPROACH
\$20.00	\$26.00	6.00	1P16XX96 NASA 516, TURN LEFT HEADING 180.
\$25.00	\$28.50	3.50	1A 10 ACT PUSH-TO-TALK SW
\$26.00	\$28.50	3.50	1P16YY96 516, ROGER, HEADING 180.
\$23.00			140007 HEADING CHANGE PROC.
\$23.00			168L06 BEGIN TURN TO BASE
\$33.00			140007 HEADING CHANGE PROC.
\$40.00			140023 REPORT 1000 FT TO LEVEL OFF
\$40.00	\$42.13	2.13	3H 02 MON CORR BARO ALT INDIC
\$42.00	\$43.70	1.70	1P140046 CALL OUT -[1000 FEET TO LEVEL OFF]
\$43.00			140007 HEADING CHANGE PROC.
\$50.00			00EV03 C/P EXT VIS SCAN
\$50.00	\$56.00	16.00	8A 10 PILOT EXTERNAL VISION SCAN
\$55.00			000003 FLIGHT INSTRUMENT SCAN - A
\$65.00			180041 MON VOR/RMI-1
\$68.00			180042 MON ADF/RMI-1
\$70.00			180006 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
\$70.00	\$80.00	10.00	1P16XX96 NASA 516, 12 MILES FROM OM, TURN LT HDG 110, MAINTAIN 6000 FT UNTIL CROSSING SAHRR
\$87.00	\$84.00	7.00	1A 26 ACTUATE COMM 2 PUSH- TO-TALK SW
\$87.00	\$84.00	7.00	1P16YY96 516 ROGER, CLEARED FOR ILS 8 LEFT APPR, TOWER AT SAHRR.
\$80.00	\$87.00	7.00	1P16ZZ96 CLEARED FOR ILS RUN- WAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT SAHRR.
\$75.00			140007 HEADING CHANGE PROC.
\$75.00			168L07 TURN TO INTERCEPT FINAL APPR. COURSE
\$86.00			140007 HEADING CHANGE PROC.
\$87.00			180034 TUNE ATLANTA TOWER -119.5

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
597.00	601.88	4.88	1B 07 MON VHF-2R FREQ IND
597.00	599.88	2.88	1B 08 SET VHF-2R FREQ - WHOLE NO.8
599.88	601.88	1.88	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			160079 MON INSTRUMENTS ON FINAL APP - P
607.00			160047 MON INSTRUMENTS ON FINAL APP
607.00	617.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
607.00	617.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
607.00	617.00	10.00	3R 63 MON SLIDE SLOPE ATT INDIC ON FDI
607.00	617.00	10.00	3A 10 MONITOR AIRSPEED INDIC
607.00	617.00	10.00	3H 06 MON ALTIMETER
607.00	617.00	10.00	3L 02 MON VERTICAL SPEED INDIC
610.00			16AA02 SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BANRR, LEVEL AT 6000 FT
610.00			140003 ALTITUDE CHANGE PROC
610.00			16BL08 LEVEL OFF AT 6000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047 MON INSTRUMENTS ON FINAL APP
617.00	627.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
617.00	627.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
617.00	627.00	10.00	3R 63 MON SLIDE SLOPE ATT INDIC ON FDI
617.00	627.00	10.00	3A 10 MONITOR AIRSPEED INDIC
617.00	627.00	10.00	3H 06 MON ALTIMETER
617.00	627.00	10.00	3L 02 MON VERTICAL SPEED INDIC
620.00			16AA03 ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BANRR
623.00			160037 CAPTURE ILS LOC BEGIN TURN TO HDB 080
623.00	626.68	2.68	3R 69 MON INITIAL MOVEMENT OF ROLL COMMAND BAR ON FDI
626.68	628.80	1.30	1P160087 CALL OUT -[LOCALIZER ALIVE]
628.80	631.60	2.00	1P 02 MONITOR CALL-OUT
627.00			160047 MON INSTRUMENTS ON FINAL APP
627.00	637.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
627.00	637.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
627.00	637.00	10.00	3R 63 MON SLIDE SLOPE ATT INDIC ON FDI
627.00	637.00	10.00	3A 10 MONITOR AIRSPEED INDIC
627.00	637.00	10.00	3H 06 MON ALTIMETER
627.00	637.00	10.00	3L 02 MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
637.00			160047 MON INSTRUMENTS ON FINAL APP
637.00	647.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
637.00	647.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
637.00	647.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
637.00	647.00	10.00	3A 10 MONITOR AIRSPEED INDIC
637.00	647.00	10.00	3H 06 MON ALTIMETER
637.00	647.00	10.00	3L 02 MON VERTICAL SPEED INDIC
643.00			160046 ANNUNCIATOR RECALL
643.00	645.28	2.28	7A 38 ACTUATE ANNUN PNL RECALL SW
645.28	645.81	0.53	7A 38 MON ALL ANNUN LTS
645.00			160073 CONTROL A/C ON FINAL APPROACH - C 151
645.00			160078 MON INSTRUMENTS ON FINAL APP - P
647.00			160047 MON INSTRUMENTS ON FINAL APP
647.00	657.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
647.00	657.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
647.00	657.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
647.00	657.00	10.00	3A 10 MONITOR AIRSPEED INDIC
647.00	657.00	10.00	3H 06 MON ALTIMETER
647.00	657.00	10.00	3L 02 MON VERTICAL SPEED INDIC
650.00			160073 CONTROL A/C ON FINAL APPROACH - C 161
655.00			160041 MON VOR/RMI-1
657.00			160042 MON ADF/RMI-1
657.00			160048 MON ADF/RMI-2
657.00	659.28	2.28	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00			16BL09 REACH 210 KCAS
660.00			160054 ACQUIRE GLIDESLOPE
660.00	662.58	2.58	3R 60 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60	1.00	1P160071 CALL OUT -[GLIDE SLOPE ALIVE]
664.00			160061 CONTACT TOWER FOR FINAL LANDING CLEAR-ANCE
664.00	666.45	1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
666.40	671.40	5.00	1B 26 ACT PUSH-TO-TALK SW ON CONTROL HANDGRIP
666.40	671.40	5.00	1B 17 COMM VIA VHF-2
670.40	674.40	4.00	1P160038 RADIO COMM-[ATLANTA TOWER, NASA 515 IS BARRR.
674.40	681.40	7.00	1B 19 MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P160040 MON RADIO COMM - [NASA 515, NO. 3 FOR 8LDC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P160041 AT NINE.CLEARED TO LAND RW 8L.

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
001.40	003.10	1.70	1B 20 ACTUATE COMM 2 PUSH- TO-TALK SW
001.40	003.10	1.70	1B 16 COMM VIA VHF-2
001.40	003.10	1.70	1P100037 RADIO COMM - (SIS, ROGER)
004.00			100L10 CROSS BARR
070.00			100072 CONTROL AIRCRAFT ON FINAL APP - 312401
004.00			100011 SET FLAPS TO FLAPS 1
004.00	004.70	0.70	1P 10 MONITOR CALL-OUT
005.00	007.00	2.00	4E 07 SET FLAP CONT LEVER TO FLAPS 1
007.00	009.02	2.23	4E 16 MONITOR FLAP POSITION INDICATOR
009.02	001.00	1.17	4M 03 MON LE FLAPS-IN- TRANSIT LT ON
001.00	002.26	1.17	4M 04 MON LE FLAPS-IN- TRANSIT LT OFF
002.26	002.96	0.70	1P100050 CALL OUT -[FLAPS 1]
070.00			100080 MON INSTRUMENTS ON FINAL APP - P
005.00			100L11 REACH 100 KCAS
004.00			100017 SET FLAPS TO FLAPS 5
005.00	007.00	2.00	4E 00 SET FLAP CONT LEVER TO FLAPS 5
009.00	009.70	0.70	1P100001 CALL OUT -[FLAPS 5]
004.00			100018 FLAP SET PROCEDURE
004.00	004.70	0.70	1P 10 MONITOR CALL-OUT
006.00	008.02	2.23	4E 16 MONITOR FLAP POSITION INDICATOR
008.71	701.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
007.00	008.00	1.17	4M 03 MON LE FLAPS-IN- TRANSIT LT ON
008.00	700.03	1.17	4M 04 MON LE FLAPS-IN- TRANSIT LT OFF
009.00			030007 ENGINE INSTRUMENT SCAN
009.00	009.44	0.44	7F 26 MON ENG NO 1 EPR IND
009.00	009.44	0.44	7F 30 MON ENG NO 2 EPR IND
009.44	009.88	0.44	7F 21 MON NO 1 ENG N1 IND
009.44	009.88	0.44	7F 22 MON NO 2 ENG N1 IND
009.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
009.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F 24 MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 00 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
702.52	702.98	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			180080 MON INSTRUMENTS ON FINAL APP - P
708.00			18BL12 REACH 170 KCAS
710.00			180047 MON INSTRUMENTS ON FINAL APP
710.00	720.00	10.00	3R 82 MONITOR LOCALIZER INDICATOR ON FDI
710.00	720.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
710.00	720.00	10.00	3R 83 MON GLIDE SLOPE ATT INDIC ON FDI
710.00	720.00	10.00	3A 10 MONITOR AIRSPEED INDIC
710.00	720.00	10.00	3H 06 MON ALTIMETER
710.00	720.00	10.00	3L 02 MON VERTICAL SPEED INDIC
720.00			180047 MON INSTRUMENTS ON FINAL APP
720.00	730.00	10.00	3R 82 MONITOR LOCALIZER INDICATOR ON FDI
720.00	730.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
720.00	730.00	10.00	3R 83 MON GLIDE SLOPE ATT INDIC ON FDI
720.00	730.00	10.00	3A 10 MONITOR AIRSPEED INDIC
720.00	730.00	10.00	3H 06 MON ALTIMETER
720.00	730.00	10.00	3L 02 MON VERTICAL SPEED INDIC
730.00			180047 MON INSTRUMENTS ON FINAL APP
730.00	740.00	10.00	3R 82 MONITOR LOCALIZER INDICATOR ON FDI
730.00	740.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
730.00	740.00	10.00	3R 83 MON GLIDE SLOPE ATT INDIC ON FDI
730.00	740.00	10.00	3A 10 MONITOR AIRSPEED INDIC
730.00	740.00	10.00	3H 06 MON ALTIMETER
730.00	740.00	10.00	3L 02 MON VERTICAL SPEED INDIC
730.00			00EV21 PILOT EXT VIS SCAN
740.00			180069 SET SPEED BRAKES
744.00			180048 MON ADF/RMI-2
744.00	746.28	2.28	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			180080 MON INSTRUMENTS ON FINAL APP - P
745.00			18BL13 CROSS REIFF
748.00			180070 SET AUTO BRAKES
748.00	750.82	2.82	4D 43 SET AUTO BRAKE SEL SW TO MED
750.82	750.88	0.06	4D 40 MON AUTO BRAKE INOP LT OFF
755.00			00EV01 C/P EXT VIS SCAN
755.00	760.00	5.00	9A 10 PILOT EXTERNAL VISION SCAN
765.00			180047 MON INSTRUMENTS ON FINAL APP
765.00	775.00	10.00	3R 82 MONITOR LOCALIZER INDICATOR ON FDI



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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
765.00	775.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H 06 MON ALTIMETER
765.00	775.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160047 MON INSTRUMENTS ON FINAL APP
775.00	785.00	10.00	3R 03 MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H 06 MON ALTIMETER
775.00	785.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160050 MON INSTRUMENTS ON FINAL APP - P
800.00			160058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074 CALL OUT -(RUNWAY IN SITE)
805.00			00EV21 PILOT EXT VIS SCAN
808.00			160018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.88	812.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.88	812.86	1.17	4M 03 MON LE FLAPS-IN- TRANSIT LT ON
812.86	814.03	1.17	4M 04 MON LE FLAPS-IN- TRANSIT LT OFF
808.00			160025 SET FLAPS TO FLAPS 15
808.00	811.48	2.48	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160082 CALL OUT -(FLAPS 15)
812.00			160042 MON ADF/RMI-1
815.00			160059 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
816.00			160114 CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049 MON RADIO ALTIMETER
816.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			160060 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
765.00	775.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H 06 MON ALTIMETER
765.00	775.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160047 MON INSTRUMENTS ON FINAL APP
775.00	785.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H 06 MON ALTIMETER
775.00	785.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160050 MON INSTRUMENTS ON FINAL APP - P
800.00			160058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074 CALL OUT -(RUNWAY IN SITE)
805.00			00EV21 PILOT EXT VIS SCAN
808.00			160018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.89	812.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.89	812.88	1.17	4N 03 MON LE FLAPS-IN- TRANSIT LT ON
812.88	814.03	1.17	4N 04 MON LE FLAPS-IN- TRANSIT LT OFF
808.00			160025 SET FLAPS TO FLAPS 15
809.00	811.48	2.48	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062 CALL OUT -(FLAPS 15)
812.00			160042 MON ADF/RMI-1
815.00			160059 CROSS RWY 06 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
815.00			160114 CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049 MON RADIO ALTIMETER
815.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			160060 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
823.50	824.04	0.54	40 08 MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160080 MON INSTRUMENTS ON FINAL APP - P
845.00			160082 LANDING CHECKLIST
845.00	846.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -(RECALL)
847.60	848.00	0.40	1P160077 CALL OUT -(CHECKED)
848.00	849.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -(SPEED BRAKES)
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -(LANDING GEAR)
855.20	856.20	1.00	1P160081 CALL OUT -(DOWN, THREE GREEN)
856.20	857.20	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082 CALL OUT -(FLAPS)
858.60	859.70	1.10	1P160083 CALL OUT -(FIFTEEN GREEN LIGHT)
861.10	862.20	1.10	1P160084 CALL OUT -(CHECKLIST COMPLETE)
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
865.00			160080 MON INSTRUMENTS ON FINAL APP - P
865.00	875.00	10.00	00EV02 C/P EXT VIS SCAN
877.00			8A 10 PILOT EXTERNAL VISION SCAN
877.00	887.00	10.00	160047 MON INSTRUMENTS ON FINAL APP
877.00	887.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
877.00	887.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
877.00	887.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
877.00	887.00	10.00	3A 10 MONITOR AIRSPEED INDIC
877.00	887.00	10.00	3H 06 MON ALTIMETER
877.00	887.00	10.00	3L 02 MON VERTICAL SPEED INDIC
885.00			00EV21 PILOT EXT VIS SCAN
889.00			030007 ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25 MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30 MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21 MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22 MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23 MON NO 1 ENG N3 IND
890.32	890.76	0.44	7F 24 MON NO 2 ENG N3 IND

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
890.78	891.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
890.78	891.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
892.52	892.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
890.00			180080 MON INSTRUMENTS ON FINAL APP - P
895.00			180049 MON RADIO ALTIMETER
895.00	897.00	2.00	3J 81 MON RADIO ALT ALTITUDE INDIC
900.00			00EV04 C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
923.00			180066 DESCEND THRU -DECISION HEIGHT
923.00	925.58	2.58	3R 12 MON DECISION HGT LT ON FDI
925.58	928.38	0.80	1P180088 CALL OUT -(DECISION HEIGHT)
924.00			180088 CONTROL AIRCRAFT THRU TOUCHDOWN
925.00			180084 CROSS RWY 08 MIDDLE MARKER
925.00	928.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
928.00			18BL16 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
930.00			090003 FLIGHT INSTRUMENT SCAN - A
940.00			180047 MON INSTRUMENTS ON FINAL APP
940.00	950.00	10.00	3R 82 MONITOR LOCALIZER INDICATOR ON FDI
940.00	950.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
940.00	950.00	10.00	3R 83 MON GLIDE SLOPE ATT INDIC ON FDI
940.00	950.00	10.00	3A 10 MONITOR AIRSPEED INDIC
940.00	950.00	10.00	3H 06 MON ALTIMETER
940.00	950.00	10.00	3L 02 MON VERTICAL SPEED INDIC
941.00			18BL16 CROSS RW THRESHOLD
950.00			00EV02 C/P EXT VIS SCAN
950.00	960.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
950.00			180088 TOUCHDOWN
950.00			18BL17 TOUCHDOWN
950.00			090003 FLIGHT INSTRUMENT SCAN - A

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
980.00			160047 MON INSTRUMENTS ON FINAL APP
980.00	970.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
980.00	970.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON C1
980.00	970.00	10.00	3R 03 MON SLIDE SLOPE ATT INDIC ON FDI
980.00	970.00	10.00	3A 10 MONITOR AIRSPEED INDIC
980.00	970.00	10.00	3H 06 MON ALTIMETER
980.00	970.00	10.00	3L 02 MON VERTICAL SPEED INDIC
970.00			00EV02 C/P EXT VIS SCAN
970.00	980.00	10.00	0A 10 PILOT EXTERNAL VISION SCAN
970.00			000003 FLIGHT INSTRUMENT SCAN - A
984.00			160071 HANDOFF TO GROUND CONTROL -121.9
984.00	980.00	8.00	1B 18 MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P160067 MON RADIO COMM - [NASA 515, EXIT RUN- WAY NEXT INTERSEC- TION. CONTACT GROUND
987.50	980.00	2.50	1P160068 POINT MINER WHEN CLEAR OF RUNWAY, OVER]
990.00	992.50	2.50	1B 14 ACT PUSH-TO-TALK SW ON HANDGRIP
990.00	992.50	2.50	1B 16 COMM VIA VHF-2
990.00	992.50	2.50	1P160069 RADIO COMM -[515, ROGER. POINT MINER WHEN CLEAR]
993.00	998.08	5.08	1B 01 MON VHF-2L FREQ IND
993.00	995.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
995.88	997.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
998.00	999.45	1.45	1B 05 SET VHF-2 COMM TFR SW TO LEFT
999.50	1003.00	3.50	1B 20 ACTUATE COMM 2 PUSH- TO-TALK SW
999.50	1003.00	3.50	1B 16 COMM VIA VHF-2
999.50	1003.00	3.50	1P160090 RADIO COMM -[ATLANTA GROUND. THIS IS NASA 515. TAXI TO GATE X, OVER]
1004.00	1007.50	3.50	1B 18 MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P160091 MON RADIO COMM - [NASA 515, ATLANTA GROUND. TAXI TO RAMP VIA NORTHEAST-SOUTH-
1007.50	1008.50	1.00	1P160092 WEST TAXIWAY, OVER]
1009.00	1010.70	1.70	1B 20 ACTUATE COMM 2 PUSH- TO-TALK SW
1009.00	1010.70	1.70	1B 16 COMM VIA VHF-2
1009.00	1010.70	1.70	1P160037 RADIO COMM - [515, ROGER]
990.00			000003 FLIGHT INSTRUMENT SCAN - A
1010.00			00EV03 C/P EXT VIS SCAN
1010.00	1025.00	15.00	0A 10 PILOT EXTERNAL VISION SCAN

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 \* UNSHIFTED \*  
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 MISSION SCENARIO REPORT  
 MISSION - MD-8 DATA LINK  
 ILS AP-BASE LN.  
 CONFIGURATION - 737 CONVNT FLT DCK  
 CREWMEMBER - COPILOT  
 \*\*\*\*\*

NOV10 1988

TIME INTERVAL (SECS)  
 SINCE MISSION START  
 BEGINNING END

TOTAL  
 ACTIVITY  
 TIME

FLIGHT PHASE  
 EVENT/PROCEDURE  
 TASK

0.00

0.00

0.00

0.00 1.45

1.50 3.50

0.00

10.00

15.00

15.00 21.00

21.00 26.00

26.00 31.08

26.00 29.00

29.00 31.08

31.50 34.40

31.50 33.77

15.00

38.00

38.00 41.00

41.00 41.77

41.77 43.75

43.75 45.73

45.73 47.23

49.00

49.00 51.89

52.00 53.98

52.00 53.98

52.00 54.26

54.00 56.50

58.00

1.45

2.00

5.00

5.00

5.08

3.00

2.08

2.80

2.27

3.00

0.77

1.98

1.98

1.50

2.89

1.98

1.98

2.26

1.50

16DL DATA LINK PFD ILS AP

16DL01 CROSS LOGEN INTERSEC  
 TION AT 250 KCAS AND  
 14000 FEET ATL CENTR  
 HAS PREVIOUSLY INSTR  
 UCTED NASA 615 TO  
 MONITOR ATL APPROACH  
 ON 126.9 AT LOGEN.  
 VHF-2R HAS BEEN SET.

16DL90 MONITOR ATL APPROACH  
 ON 126.9/VHF-2R

1B 06 SET VHF-2 COMM TFR  
 SW TO RIGHT

1B 04 ADJ VHF-2 VOLUME

140003 ALTITUDE CHANGE PROC

090039 FLIGHT INSTRUMENT  
 SCAN - F

160013 SET NAV-1 TO RUNWAY  
 6L ILS -109.3

8B 06 RETREIVE CHARTS

8B100003 REVIEW CHARTS TO  
 DETERMINE RUNWAY 08  
 ILS FREQ AND REQ VOR  
 FREQ

6U 01 MON NAV-1 FREQ INDIC

6U 02 SET NAV-1 FREQ -  
 WHOLE NO.8

6U 03 SET NAV-1 FREQ -  
 FRACTIONS

1P100059 CALL OUT -(RUNWAY 6L  
 ILS IS ON NAV 1)

6H 02 MON VOR POINTER NO.1  
 ON VOR/RMI 2 INDIC

00EV30 PILOT EXT VIS SCAN

160039 SET ADF-1 TO CATT  
 -375KC

6D 17 SET ADF NO.1 SFO SW  
 TO OFF

6D 22 MON ADF NO.1 TUNING  
 METER INDIC

6D 01 MONITOR ADF NO 1  
 FREQ INDIC

6D 02 SELECT ADF NO 1 FREQ  
 INDIC

1P100065 CALL OUT -(CATT  
 ON ADF-1)

160040 SET ADF-2 TO FLANC  
 -344

6E 17 SEL ADF NO.2 FREQ  
 SAND .19-.40

6E 01 MON ADF NO 2 FREQ.  
 INDIC

6E 02 SELECT ADF NO 2 FREQ

6E 20 MON ADF NO.2 TUNING  
 METER INDIC

1P100066 CALL OUT -(FLANC  
 ON ADF-2)

160038 SET DECISION HEIGHT  
 ON RADIO ALTIMETER

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
84.00			080007 ENGINE INSTRUMENT SCAN
84.00	84.44	0.44	7F 25 MON ENG NO 1 EPR IND
84.00	84.44	0.44	7F 30 MON ENG NO 2 EPR IND
84.44	84.88	0.44	7F 21 MON NO 1 ENG N1 IND
84.44	84.88	0.44	7F 22 MON NO 2 ENG N1 IND
84.88	85.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
84.88	85.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
85.32	85.76	0.44	7F 23 MON NO 1 ENG N2 IND
85.32	85.76	0.44	7F 24 MON NO 2 ENG N2 IND
85.76	86.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
85.76	86.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
86.20	86.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
86.64	87.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
86.64	87.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
87.08	87.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
87.08	87.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
87.52	87.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
87.52	87.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
88.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 280 KCAS USING PITCH CMD MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 8000 FT.
70.00			180005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.00	5.00	08 02 RETREIVE CHECKLIST
78.00	83.00	5.00	08 05 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	08 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P180044 CALL OUT-(ANTI-ICE)
87.00	87.80	0.80	1P180045 CALL OUT-(NOT REQD)
88.00	89.00	2.00	08 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P180046 CALL OUT -(AIR CON- DITIONING AND PRES- SURIZATION)
92.00	94.67	2.67	7D 69 MON PASS CAB TEMP CONT SETTING
94.67	96.88	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.88	97.88	1.17	7E 08 MON LDS ALT CNTR
98.00	98.40	0.40	1P180047 CALL OUT [SET]
70.00			00EV33 PILOT EXT VIS SCAN
100.00			180006 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	08 03 READ NEXT ITEM ON CHECKLIST
102.00	102.90	0.90	1P180048 CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P 06 MONITOR REPORT
109.00	111.00	2.00	08 03 READ NEXT ITEM ON CHECKLIST

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
111.00	112.10	1.10	1P180050 CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G 17 SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P180051 CALL OUT -[ON]
114.50	116.50	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P180052 CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H 02 MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H 05 F.O. CHECK CAPT'S ALTIMETER BARO SET AND INDICATED ALTI-TUDE
123.40	124.70	1.30	1P180053 CALL OUT-[SET AND CROSSCHECKED]
126.00			180007 DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P180054 CALL OUT-[EPR AND IAS BUGS]
129.00	131.00	3.00	8B010004 RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B180001 DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F 26 SET ENG NO 1 EPR BUG
138.32	138.32	2.00	7F 27 MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F 28 SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F 29 MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B180002 DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A 07 MON V-REF BUG SETTING
148.00	148.57	2.57	3A 08 SET V-REF BUG
148.00	147.90	1.90	1P180055 CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A 12 F.O. CHECK CAPT'S V-REF BUG SETTING
154.00	155.60	1.60	1P180056 CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
155.60	158.90	1.30	1P180057 CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B 08 STOW CHECKLIST
160.60	162.60	2.00	8B010006 STOW FLIGHT PLANNING REF. DATA MANUAL
130.00			080019 FLIGHT INSTRUMENT SCAN - D
163.00			030007 ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	166.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	166.88	0.44	7F 22 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
166.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC



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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
186.76	187.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
187.20	187.64	0.44	7F 08 MON NO 1 ENG OIL PRESS INDIC
187.64	188.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
187.64	188.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
188.08	188.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
188.08	188.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
188.52	189.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
188.52	189.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
172.00			00EV03 C/P EXT VIS SCAN
172.00	187.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
185.00			160048 MON ADF/RMI-2
185.00	187.20	2.28	8E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
185.00			18DL91 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
185.00	186.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
186.80	188.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
188.80	200.40	1.80	1X100001 LINE SELECT (ATC UPLINKS PENDING)
200.40	210.40	10.00	1D16XX01 READ -TURN RT HDG 270,DESCND AND MAIN- TAIN 8000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X100041 LINE SELECT (WILCO)
200.00			140007 HEADING CHANGE PROC.
200.00			16BL02 BEGIN TURN TO DOWN- WIND LEG
210.00			16BL03 DESCEND THRU 11000.
215.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SANRA AT 8000 FT.
219.00			160082 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
221.88	223.88	1.88	1B 03 SET VHF-2L FREQ - FRACTIONS
226.00			16DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
226.00	227.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
227.50	229.50	2.00	1B 04 ADJ VHF-2 VOLUME
220.00			090017 FLIGHT INSTRUMENT SCAN - C
240.00			00EV09 C/P EXT VIS SCAN
240.00	285.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN

C-2

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
250.00			080038 FLIGHT INSTRUMENT SCAN - F
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EY08 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 260 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHARA AT 5000 FT.
340.00			00EY04 C/P EXT VIS SCAN
340.00	360.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F 25 MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F 30 MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F 21 MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F 22 MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23 MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F 24 MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME
365.64	366.08	0.44
366.08	366.52	0.44
366.08	366.52	0.44
366.52	366.96	0.44
366.52	366.96	0.44
370.00		
370.00		
370.00	371.60	1.60
371.60	373.60	2.00
373.60	375.40	1.80
375.40	379.40	4.00
379.40	381.20	1.80
370.00		
385.00		
385.00	425.00	40.00
430.00		
430.00	430.44	0.44
430.00	430.44	0.44
430.44	430.88	0.44
430.44	430.88	0.44
430.88	431.32	0.44
430.88	431.32	0.44
431.32	431.76	0.44
431.32	431.76	0.44
431.76	432.20	0.44
431.76	432.20	0.44
432.20	432.64	0.44
432.64	433.08	0.44
432.64	433.08	0.44
433.08	433.52	0.44
433.08	433.52	0.44
433.52	433.96	0.44
433.52	433.96	0.44
450.00		
450.00	451.80	1.80
451.80	453.80	2.00

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EVENT/PROCEDURE TASK
7F 18 MON NO 2 ENG OIL TEMP INDIC
7F 11 MON NO 1 ENG OIL QTY INDIC
7F 18 MON NO 2 ENG OIL QTY INDIC
7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
16BL04 DESCEND THRU 8000.
16DL94 ALTITUDE STEP DOWN
1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PROG] AMBER
1X160001 LINE SELECT [ATC UPLINKS PENDING]
1D16XX94 READ -DESCEND AND MAINTAIN 8000 FT
1X160041 LINE SELECT [WILCO]
080039 FLIGHT INSTRUMENT SCAN - F
00EV08 C/P EXT VIS SCAN
8A 11 PILOT EXTERNAL VISION SCAN
030007 ENGINE INSTRUMENT SCAN
7F 25 MON ENG NO 1 EPR IND
7F 30 MON ENG NO 2 EPR IND
7F 21 MON NO 1 ENG N1 IND
7F 22 MON NO 2 ENG N1 IND
7F 31 MON ENG NO 1 EXN GAS TEMP IND
7F 32 MON ENG NO 2 EXN GAS TEMP IND
7F 23 MON NO 1 ENG N2 IND
7F 24 MON NO 2 ENG N2 IND
7F 33 MON ENG NO 1 FUEL FLOW INDIC
7F 34 MON ENG NO 2 FUEL FLOW INDIC
7F 09 MON NO 1 ENG OIL PRESS INDIC
7F 10 MON NO 1 ENG OIL TEMP INDIC
7F 18 MON NO 2 ENG OIL TEMP INDIC
7F 11 MON NO 1 ENG OIL QTY INDIC
7F 19 MON NO 2 ENG OIL QTY INDIC
7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
16DL02 RECEIVE ATL ETIS TERMINAL INFORMATION
1X160004 LINE SELECT [ETIS REQUESTS]
1D16XX33 READ [ETIS REQUEST FOR KATL]

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
453.80	455.60	1.80	1X160048 LINE SELECT [FULL ETIS REPORT]
458.60	460.20	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
460.20	462.20	2.00	1D16XX08 MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
462.20	464.00	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
464.00	474.00	10.00	1D16XX31 READ-ETIS REPORT FOR ATL AT XXXXZ. SKY 25 SCT/40 SKN. VSB 18. WIND 110/10/G17.
474.00	479.00	5.00	1D16XX32 TEMP 89. ALT 2984. APR RW08L AND RW09R SIMULT PARALLEL ILS
479.00	480.80	1.80	1X160047 LINE SELECT [PRINT MESSAGE]
480.00			18BL05 CROSS FT NDB
470.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 5000 FT.
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043 CALL OUT-[DESCENT AND APPROACH CHECK- LIST]
484.00			140032 ALTIMETER BARO SET PROC.
484.00	488.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	488.65	2.65	3H 05 SET ALTIMETER BARO SETTING CONTROL
490.00			090017 FLIGHT INSTRUMENT SCAN - C
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24 MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
515.20	515.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
518.52	518.98	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041 MON VOR/RMI-1
520.00			16DL95 VECTOR FOR BASE LEG
520.00	521.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
521.80	523.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
523.80	525.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
525.40	528.40	3.00	1D16XX06 READ -TURN LEFT HEADING 180
528.40	530.20	1.80	1X180041 LINE SELECT [WILCO]
523.00			140007 HEADING CHANGE PROC.
523.00			16BL06 BEGIN TURN TO BASE
533.00			140007 HEADING CHANGE PROC.
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140046 CALL OUT -(1000 FEET TO LEVEL OFF)
543.00			140007 HEADING CHANGE PROC.
550.00			00EV03 C/P EXT VIS SCAN
550.00	555.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090003 FLIGHT INSTRUMENT SCAN - A
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			16DL96 VECTOR TO FINAL APPR
570.00	571.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
571.80	573.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
573.80	575.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
575.40	584.40	9.00	1D16XX06 READ -12 NM FROM OM TURN LT HDG 110.MAIN TAIN 5000 UNTIL XING BAHRA.
584.40	591.40	7.00	1D16ZZ07 CLEARED FOR ILS SL APPR.MONITOR TOWER ON 119.5 AT BAHRA
591.40	593.20	1.80	1X180041 LINE SELECT [WILCO]
575.00			140007 HEADING CHANGE PROC.
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
593.00			140007 HEADING CHANGE PROC.
597.00			160034 TUNE ATLANTA TOWER -119.5
597.00	601.88	4.88	1B 07 MON VHF-2R FREQ IND
597.00	599.88	2.88	1B 08 SET VHF-2R FREQ - WHOLE NO.5
599.88	601.88	1.98	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			160079 MON INSTRUMENTS ON FINAL APP - P
607.00			160047 MON INSTRUMENTS ON FINAL APP

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
607.00	617.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
607.00	617.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
607.00	617.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
607.00	617.00	10.00	3A 10 MONITOR AIRSPEED INDIC
607.00	617.00	10.00	3H 06 MON ALTIMETER
607.00	617.00	10.00	3L 02 MON VERTICAL SPEED INDIC
610.00			16AA02 SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO SAHRR, LEVEL AT 5000 FT
610.00			140003 ALTITUDE CHANGE PROC
610.00			16BL06 LEVEL OFF AT 5000 FT BEGIN DECEL FROM 280 TO 210 KCAS
617.00			160047 MON INSTRUMENTS ON FINAL APP
617.00	627.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
617.00	627.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
617.00	627.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
617.00	627.00	10.00	3A 10 MONITOR AIRSPEED INDIC
617.00	627.00	10.00	3H 06 MON ALTIMETER
617.00	627.00	10.00	3L 02 MON VERTICAL SPEED INDIC
620.00			16AA03 ADJUST THRUST TO DECEL TO 210 KCAS BEFORE SAHRR
623.00			160037 CAPTURE ILS LOC BEGIN TURN TO HDB 090
623.00	625.58	2.58	3R 59 MON INITIAL MOVEMENT OF ROLL COMMAND BAR ON FDI
625.60	626.90	1.30	1P160067 CALL OUT -(LOCALIZER ALIVE)
626.50	631.50	2.00	1P 02 MONITOR CALL-OUT
627.00			160047 MON INSTRUMENTS ON FINAL APP
627.00	637.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
627.00	637.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
627.00	637.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
627.00	637.00	10.00	3A 10 MONITOR AIRSPEED INDIC
627.00	637.00	10.00	3H 06 MON ALTIMETER
627.00	637.00	10.00	3L 02 MON VERTICAL SPEED INDIC
637.00			160047 MON INSTRUMENTS ON FINAL APP
637.00	647.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
637.00	647.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
637.00	647.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
637.00	647.00	10.00	3A 10 MONITOR AIRSPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
037.00	047.00	10.00	3H 06 MON ALTIMETER
037.00	047.00	10.00	3L 02 MON VERTICAL SPEED INDIC
043.00			100045 ANNUNCIATOR RECALL
043.00	045.28	2.28	7A 28 ACTUATE ANNUN PNL RECALL SW
045.28	045.81	0.53	7A 38 MON ALL ANNUN LTS
045.00			100073 CONTROL A/C ON FINAL APPROACH - C (S)
046.00			100070 MON INSTRUMENTS ON FINAL APP - P
047.00			100047 MON INSTRUMENTS ON FINAL APP
047.00	057.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
047.00	057.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON C1
047.00	057.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
047.00	057.00	10.00	3A 10 MONITOR AIRSPEED INDIC
047.00	057.00	10.00	3H 06 MON ALTIMETER
047.00	057.00	10.00	3L 02 MON VERTICAL SPEED INDIC
050.00			100073 CONTROL A/C ON FINAL APPROACH - C (S)
055.00			100041 MON VOR/RMI-1
057.00			100042 MON ADF/RMI-1
057.00			100045 MON ADF/RMI-2
057.00	059.28	2.28	SE 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
060.00			100009 REACH 210 KCAS
060.00			100054 ACQUIRE GLIDESLOPE
060.00	062.58	2.58	3R 00 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
062.60	063.60	1.00	1P100071 CALL OUT -[GLIDE SLOPE ALIVE]
064.00			100060 MONITOR ATL TOWER ON 119.5/VHF-2R
064.00	065.48	1.48	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
065.50	067.50	2.00	1B 04 ADJ VHF-2 VOLUME
064.00			100010 CROSS BANRA
070.00			100081 LANDING CLEARANCE
070.00	071.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATTENTION
071.00	073.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNOG] AMBER
073.00	075.40	1.00	1X100001 LINE SELECT [ATC UPLINKS PENDING]
075.40	085.40	10.00	1D10XX40 READ -NO.3 FOR SL. DC-3 3 NM AHEAD WIND 110 AT 9. CLEARED TO LAND RW 01.
085.40	087.20	1.00	1X100041 LINE SELECT [WILCO]
070.00			100072 CONTROL AIRCRAFT ON FINAL APP - B(240)
084.00			100011 SET FLAPS TO FLAPS 1
084.00	084.70	0.70	1P 10 MONITOR CALL-OUT

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
686.00	687.00	2.00	4E 07 SET FLAP CONT LEVER TO FLAPS 1
687.00	689.02	2.23	4E 16 MONITOR FLAP POSITION INDICATOR
689.02	691.00	1.17	4M 03 MON LE FLAPS-IN- TRANSIT LT ON
691.00	692.20	1.17	4M 04 MON LE FLAPS-IN- TRANSIT LT OFF
692.20	692.96	0.70	1P100058 CALL OUT -[FLAPS 1]
690.00			100000 MON INSTRUMENTS ON FINAL APP - P
696.00			100L11 REACH 100 KCAS
694.00			100017 SET FLAPS TO FLAPS 3
695.00	697.00	2.00	4E 00 SET FLAP CONT LEVER TO FLAPS 3
698.00	699.70	0.70	1P100061 CALL OUT -[FLAPS 3]
694.00			100018 FLAP SET PROCEDURE
694.00	694.70	0.70	1P 10 MONITOR CALL-OUT
698.00	698.92	2.23	4E 16 MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
697.00	698.00	1.17	4M 03 MON LE FLAPS-IN- TRANSIT LT ON
698.00	700.03	1.17	4M 04 MON LE FLAPS-IN- TRANSIT LT OFF
699.00			930007 ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F 26 MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F 30 MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F 21 MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F 22 MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.78	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.78	0.44	7F 24 MON NO 2 ENG N2 IND
700.78	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.78	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 00 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
702.52	702.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			100000 MON INSTRUMENTS ON FINAL APP - P
708.00			100L12 REACH 170 KCAS
710.00			100047 MON INSTRUMENTS ON FINAL APP
710.00	720.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
710.00	720.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI



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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
710.00	720.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
710.00	720.00	10.00	3A 10 MONITOR AIRSPEED INDIC
710.00	720.00	10.00	3H 06 MON ALTIMETER
710.00	720.00	10.00	3L 02 MON VERTICAL SPEED INDIC
720.00			160047 MON INSTRUMENTS ON FINAL APP
720.00	730.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
720.00	730.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
720.00	730.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
720.00	730.00	10.00	3A 10 MONITOR AIRSPEED INDIC
720.00	730.00	10.00	3H 06 MON ALTIMETER
720.00	730.00	10.00	3L 02 MON VERTICAL SPEED INDIC
730.00			160047 MON INSTRUMENTS ON FINAL APP
730.00	740.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
730.00	740.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
730.00	740.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
730.00	740.00	10.00	3A 10 MONITOR AIRSPEED INDIC
730.00	740.00	10.00	3H 06 MON ALTIMETER
730.00	740.00	10.00	3L 02 MON VERTICAL SPEED INDIC
730.00			00EV21 PILOT EXT VIS SCAN
740.00			160069 SET SPEED BRAKES
744.00			160048 MON ADF/RMI-2
744.00	748.28	2.28	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			160060 MON INSTRUMENTS ON FINAL APP - P
748.00			16BL13 CROSS REIFF
748.00			160070 SET AUTO BRAKES
748.00	750.62	2.62	4D 43 SET AUTO BRAKE SEL SW TO MED
750.62	750.68	0.06	4D 40 MON AUTO BRAKE INOP LT OFF
755.00			00EV01 C/P EXT VIS SCAN
755.00	760.00	5.00	5A 10 PILOT EXTERNAL VISION SCAN
765.00			160047 MON INSTRUMENTS ON FINAL APP
765.00	775.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
765.00	775.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H 06 MON ALTIMETER
766.00	775.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160047 MON INSTRUMENTS ON FINAL APP

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
775.00	785.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H 06 MON ALTIMETER
775.00	785.00	10.00	3L 02 MON VERTICAL SPEED INDIC
775.00			160080 MON INSTRUMENTS ON FINAL APP - P
800.00			160068 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074 CALL OUT -(RUNWAY IN SITE)
805.00			00EV21 PILOT EXT VIS SCAN
808.00			160018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.68	812.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	816.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.68	812.68	1.17	4H 03 MON LE FLAPS-IN- TRANSIT LT ON
812.86	814.03	1.17	4H 04 MON LE FLAPS-IN- TRANSIT LT OFF
808.00			160025 SET FLAPS TO FLAPS 15
809.00	811.48	2.48	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062 CALL OUT -(FLAPS 15)
812.00			160042 MON ADF/RMI-1
816.00			160069 CROSS RWY 08 OUTER MARKER
815.00	816.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
815.00			16BL14 CROSS CATTA LOW-GEAR THEN EXTENDED AND 185 KCAS MAINTAINED
815.00			160048 MON RADIO ALTIMETER
816.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			160060 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D 09 MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160080 MON INSTRUMENTS ON FINAL APP - P
845.00			160082 LANDING CHECKLIST
845.00	846.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -(RECALL)
847.60	848.00	0.40	1P160077 CALL OUT -(CHECKED)

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
048.00	048.00	1.00	08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
050.00	050.70	0.70	1P100078 CALL OUT -(SPEED BRAKES)
051.00	052.30	1.30	1P 02 MONITOR CALL-OUT
052.50	053.50	1.00	08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
054.50	055.20	0.70	1P100080 CALL OUT -(LANDING GEAR)
055.20	056.20	1.00	1P100081 CALL OUT -(DOWN, THREE GREEN)
056.20	057.20	1.00	08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
058.20	058.80	0.40	1P100082 CALL OUT -(FLAPS)
058.80	059.70	1.10	1P100083 CALL OUT -(FIFTEEN GREEN LIGHT)
061.10	062.20	1.10	1P100084 CALL OUT -(CHECKLIST COMPLETE)
061.10	062.20	1.10	1P 12 MONITOR CALL-OUT
060.00			00EV21 PILOT EXT VIS SCAN
065.00			100080 MON INSTRUMENTS ON FINAL APP - P
065.00			00EV02 C/P EXT VIS SCAN
065.00	075.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
077.00			100047 MON INSTRUMENTS ON FINAL APP
077.00	087.00	10.00	3R 02 MONITOR LOCALIZER INDICATOR ON FDI
077.00	087.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
077.00	087.00	10.00	3R 03 MON GLIDE SLOPE ATT INDIC ON FDI
077.00	087.00	10.00	3A 10 MONITOR AIRSPEED INDIC
077.00	087.00	10.00	3H 06 MON ALTIMETER
077.00	087.00	10.00	3L 02 MON VERTICAL SPEED INDIC
085.00			00EV21 PILOT EXT VIS SCAN
089.00			030007 ENGINE INSTRUMENT SCAN
089.00	089.44	0.44	7F 25 MON ENG NO 1 EPR IND
089.00	089.44	0.44	7F 30 MON ENG NO 2 EPR IND
089.44	089.88	0.44	7F 21 MON NO 1 ENG N1 IND
089.44	089.88	0.44	7F 22 MON NO 2 ENG N1 IND
089.88	090.32	0.44	7F 31 MON ENG NO 1 EXN GAS TEMP IND
089.88	090.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
090.32	090.76	0.44	7F 23 MON NO 1 ENG N2 IND
090.32	090.76	0.44	7F 24 MON NO 2 ENG N2 IND
090.76	091.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
090.76	091.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
091.20	091.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
091.64	092.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
091.64	092.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
092.08	092.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
092.00	092.52	0.44	7F 10 MON NO 2 ENG OIL QTY INDIC
092.52	092.90	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
092.52	092.90	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
090.00			100000 MON INSTRUMENTS ON FINAL APP - P
095.00			100049 MON RADIO ALTIMETER
095.00	097.00	2.00	0J 01 MON RADIO ALT ALTITUDE INDIC
090.00			00EV04 C/P EXT VIS SCAN
090.00	020.00	20.00	0A 10 PILOT EXTERNAL VISION SCAN
023.00			100000 DESCEND THRU -DECISION HEIGHT
023.00	025.50	2.50	0R 12 MON DECISION HGT LT ON FDI
025.50	026.30	0.80	1P100000 CALL OUT -(DECISION HEIGHT)
024.00			100000 CONTROL AIRCRAFT THRU TOUCHDOWN
025.00			100004 CROSS RWY 08 MIDDLE MARKER
025.00	028.01	1.01	0V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
026.00			100L15 CROSS MIDDLE MARKER
030.00			00EV02 C/P EXT VIS SCAN
030.00	040.00	10.00	0A 10 PILOT EXTERNAL VISION SCAN
030.00			090003 FLIGHT INSTRUMENT SCAN - A
040.00			100047 MON INSTRUMENTS ON FINAL APP
040.00	050.00	10.00	0R 02 MONITOR LOCALIZER INDICATOR ON FDI
040.00	050.00	10.00	0S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
040.00	050.00	10.00	0R 03 MON SLIDE SLOPE ATT INDIC ON FDI
040.00	050.00	10.00	0A 10 MONITOR AIRSPEED INDIC
040.00	050.00	10.00	0H 00 MON ALTIMETER
040.00	050.00	10.00	0L 02 MON VERTICAL SPEED INDIC
041.00			100L16 CROSS RW THRESHOLD
050.00			00EV02 C/P EXT VIS SCAN
050.00	060.00	10.00	0A 10 PILOT EXTERNAL VISION SCAN
050.00			100000 TOUCHDOWN
050.00			100L17 TOUCHDOWN
050.00			090003 FLIGHT INSTRUMENT SCAN - A
060.00			100047 MON INSTRUMENTS ON FINAL APP
060.00	070.00	10.00	0R 02 MONITOR LOCALIZER INDICATOR ON FDI
060.00	070.00	10.00	0S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
060.00	070.00	10.00	0R 03 MON SLIDE SLOPE ATT INDIC ON FDI
060.00	070.00	10.00	0A 10 MONITOR AIRSPEED INDIC
060.00	070.00	10.00	0H 00 MON ALTIMETER

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
960.00	970.00	10.00	3L 02 MON VERTICAL SPEED INDIC
970.00			00EV02 C/P EXT VIS SCAN
970.00	980.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
970.00			000003 FLIGHT INSTRUMENT SCAN - A
984.00			10DL71 HANDOFF TO GROUND
984.00	985.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
985.00	987.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PROG] AMBER
987.00	989.40	1.00	1X100001 LINE SELECT [ATC UPLINKS PENDING]
989.40	997.40	8.00	1D16XX07 READ -EXIT RUNWAY NEXT INTERSECTION. MONITOR GROUND 121.9 WHEN CLEAR OF RUNWAY
997.40	999.20	1.00	1X100041 LINE SELECT [WILCO]
999.00			000003 FLIGHT INSTRUMENT SCAN - A
1000.00			10DL72 TUNE AND MONITOR ATL BRND ON 121.9/VHF-2L
1000.00	1004.00	4.00	1B 01 MON VHF-2L FREQ IND
1000.00	1002.00	2.00	1B 02 SET VHF-2L FREQ- WHOLE NO.8
1002.00	1004.00	1.00	1B 03 SET VHF-2L FREQ - FRACTIONS
1004.00	1006.00	1.40	1B 05 SET VHF-2 COMM TFR SW TO LEFT
1006.40	1008.40	2.00	1B 04 ADJ VHF-2 VOLUME
1009.00			10DL73 TAXI CLEARANCE FROM
1009.00	1010.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
1010.00	1012.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PROG] AMBER
1012.00	1014.40	1.00	1X100001 LINE SELECT [ATC UPLINKS PENDING]
1014.40	1019.40	5.00	1D16XX08 READ -TAXI TO RAMP VIA NE/SW TAXIWAY.
1019.40	1021.20	1.00	1X100041 LINE SELECT [WILCO]
1020.00			00EV01 C/P EXT VIS SCAN
1020.00	1025.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN

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### **B.3 NORMAL ILS APPROACH—ADVANCED FLIGHT DECK**

**Flying Pilot**

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MISSION SCENARIO REPORT  
MISSION - CURRENT HAS  
ILS AP-BASE LN.  
CONFIGURATION - 737 ADVCD FLT DCK  
CREWMEMBER - PILOT  
\*\*\*\*\*

NOV10 1986

TIME INTERVAL (SECS)  
SINCE MISSION START  
BEGINNING END

TOTAL  
ACTIVITY  
TIME

FLIGHT PHASE  
EVENT/PROCEDURE  
TASK

0.00  
0.00

10BL BASELINE AFD ILS APP

10BL01 CROSS LOGEN INTERSEC  
TION AT 250 KCAS AND  
14000 FEET. ATL CENTR  
HAS PREVIOUSLY INSTR  
UCTED NASA 815 TO  
CONTACT ATL APPR AT  
LOGEN. VNF-2R HAS AL-  
READY BEEN TUNED TO  
CORRECT FREQ-128.9.

100090 CONTACT ATL APPROACH  
ON 128.9

1P16TY90 NASA 815, ATL APPR,  
ROGER.

100080 DROP OUT OF HOR  
AND VERT PATH TO  
FPA, TKA, AND CAS  
AUTO FLT MODES  
ENTER FPA IN MCP

2H 38 MON HOR PATH MODE LT  
DARK - HOR PATH MODE  
DISENGAGED

2H 42 MON VERT PATH MODE  
LT DARK - VERT PATH  
MODE DISENGAGED

2H 08 MON AUTO MODE LT  
GREEN - AUTO MODE  
ENGAGED

2H 16 MON TKA SEL MODE LT  
GREEN - TKA SEL MODE  
ENGAGED

2H 22 MONITOR FPA SEL MODE  
LT GREEN - FPA SEL  
MODE ENGAGED

2H 26 ROTATE FPA SEL KNOB

2H 24 MONITOR FPA SEL MODE  
LT BLUE - FPA SEL  
MODE PRESELECTED

2H 27 READ FPA SEL VALUE  
ON DIGITAL INDIC

2K 32 MON ALT/RNG SYMBOLS

2H 21 PRESS FPA SEL MODE  
SW

2H 22 MONITOR FPA SEL MODE  
LT GREEN - FPA SEL  
MODE ENGAGED

090040 FLIGHT INSTRUMENT  
SCAN -A2

2J 02 MON PITCH ATTITUDE  
INDIC

3L 02 MON VERTICAL SPEED  
INDIC

3A 10 MONITOR AIRSPEED  
INDIC

2K 14 MON MAP VIDEO

2K 46 MON STRAIGHT TREND  
VECTOR SYMBOL

2K 33 MON CURVED TREND  
VECTOR SYMBOLS

090040 FLIGHT INSTRUMENT  
SCAN -A2

2J 02 MON PITCH ATTITUDE  
INDIC

0.00

9.40 13.40

4.00

0.00

0.00 0.78

0.78

0.00 0.78

0.78

0.80 2.14

1.34

2.10 2.87

0.77

2.10 2.87

0.77

2.90 5.35

2.45

2.90 3.67

0.77

4.30 5.38

1.08

5.40 7.40

2.00

7.40 8.80

1.40

8.80 9.67

0.77

10.00

10.00 40.00

30.00

10.00 40.00

30.00

10.00 40.00

30.00

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40.00 70.00

30.00

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
40.00	70.00	30.00	3L 02 MON VERTICAL SPEED INDIC
40.00	70.00	30.00	3A 10 MONITOR AIRSPEED INDIC
40.00	70.00	30.00	2K 14 MON MAP VIDEO
40.00	70.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
40.00	70.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
70.00			080048 FLIGHT INSTRUMENT SCAN -A2
70.00	100.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
70.00	100.00	30.00	3L 02 MON VERTICAL SPEED INDIC
70.00	100.00	30.00	3A 10 MONITOR AIRSPEED INDIC
70.00	100.00	30.00	2K 14 MON MAP VIDEO
70.00	100.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
70.00	100.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
15.00			100013 SET NAV-1 TO RUNWAY 8L ILS -109.3
31.50	34.00	2.50	1P 12 MONITOR CALL-OUT
34.00	36.25	2.25	5Q 04 MON VOR POINTER NO.1 ON VOR/AMI 1 INDIC
60.00			90EV30 PILOT EXT VIS SCAN
60.00	110.00	50.00	8A 12 PILOT EXTERNAL VISION SCAN
38.00			100039 SET ADF-1 TO CATT -375KC
45.73	47.23	1.50	1P 02 MONITOR CALL-OUT
49.00			100040 SET ADF-2 TO FLANC -344
54.00	55.50	1.50	1P 02 MONITOR CALL-OUT
58.00			100038 SET DECISION HEIGHT ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
70.00			100005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P100043 CALL OUT-(DESCENT AND APPROACH CHECK- LIST)
85.00	86.00	1.00	1P 10 MONITOR CALL-OUT
87.00	87.80	0.80	1P 07 MONITOR REPORT
90.00	91.80	1.80	1P 13 MONITOR CALL-OUT
98.00	98.40	0.40	1P 16 MONITOR REPORT
100.00			100006 DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P 11 MONITOR CALL-OUT
103.00	108.54	3.54	7M 03 SET ENG NO.1 START SW TO FLT
108.54	108.28	1.74	7M 06 SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P100049 CALL OUT [FLIGHT]
111.00	112.10	1.10	1P 12 MONITOR CALL-OUT
114.20	114.50	0.30	1P 16 MONITOR REPORT
116.50	117.90	1.40	1P 12 MONITOR CALL-OUT
123.40	124.70	1.30	1P 09 MONITOR REPORT
128.00			100007 DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02 MONITOR CALL-OUT



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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
146.00	147.00	1.00	1P 14 MONITOR CALL-OUT
148.00	150.57	2.57	3A 07 MON V-REF BUG SETTING
148.00	150.57	2.57	3A 06 SET V-REF BUG
151.00	154.00	3.00	3A 13 CAPT CHECK F.O. 48 V-REF BUG SETTING
154.00	155.00	1.00	1P 08 MONITOR REPORT
157.00	158.00	1.30	1P 02 MONITOR CALL-OUT
158.00			030007 ENGINE INSTRUMENT SCAN
150.00			00EY05 C/P EXT VIS SCAN
155.00			000051 FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
185.00	195.00	10.00	3L 02 MON VERTICAL SPEED INDIC
186.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
186.00	195.00	10.00	2K 14 MON MAP VIDEO
186.00	195.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K 38 MON CURVED TREND VECTOR SYMBOLS
185.00			160048 MON ADF/RMI-2
195.00			160001 HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX01 N 515, TURN RT HDG 270 DESCND AND MAINTAIN 6000 FT, CONTACT ATL APPR ON 127.25.
200.00			160001 ENTER/ARM NEW ALT IN MCP
200.00	202.47	2.47	2H 33 ROTATE ALT ENG KNOB
200.00	200.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
201.40	202.48	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
202.50	203.92	1.42	2H 28 PRESS ALT ENG MODE S SW
203.90	204.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00			160L02 BEGIN TURN TO DOWN- WIND LEG
205.00			160002 ENTER NEW HEADING IN MCP
205.00	207.50	2.50	2H 10 ROTATE TKA SEL KNOB
205.00	208.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
207.50	208.27	0.77	2H 16 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			160L03 DESCEND THRU 11000.
210.00			000051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO
210.00	220.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
210.00	220.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
218.00			160092 TUNE ATL APPROACH ON 127.25
228.00			160093 CONTACT ATL APPROACH ON 127.25
231.80	238.80	4.00	1P16YY90 NASA S15, ATL APPR. ROGER.
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
220.00	250.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L 02 MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A 10 MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K 14 MON MAP VIDEO
220.00	250.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
240.00			00EV09 C/P EXT VIS SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L 02 MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A 10 MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K 14 MON MAP VIDEO
250.00	280.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L 02 MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A 10 MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K 14 MON MAP VIDEO
280.00	310.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L 02 MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A 10 MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K 14 MON MAP VIDEO
310.00	340.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L 02 MON VERTICAL SPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
288.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EY09 C/P EXT VIS SCAN
340.00			00EY04 C/P EXT VIS SCAN
383.00			030007 ENGINE INSTRUMENT SCAN
370.00			18BL04 DESCEND THRU 8000.
370.00			180004 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P18XX04 NASA 515, DESCEND AND MAINTAIN 5000 FT.
375.00			180081 ENTER/ARM NEW ALT IN MCP
375.00	377.47	2.47	2H 33 ROTATE ALT ENG KNOB
375.00	375.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
376.40	377.48	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
377.50	378.92	1.42	2H 28 PRESS ALT ENG MODE S SW
378.90	379.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			090048 FLIGHT INSTRUMENT SCAN -A2
385.00	415.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
385.00	415.00	30.00	3L 02 MON VERTICAL SPEED INDIC
385.00	415.00	30.00	3A 10 MONITOR AIRSPEED INDIC
385.00	415.00	30.00	2K 14 MON MAP VIDEO
385.00	415.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
385.00	415.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
415.00			090048 FLIGHT INSTRUMENT SCAN -A2
415.00	445.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
415.00	445.00	30.00	3L 02 MON VERTICAL SPEED INDIC
415.00	445.00	30.00	3A 10 MONITOR AIRSPEED INDIC
415.00	445.00	30.00	2K 14 MON MAP VIDEO
415.00	445.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
415.00	445.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
445.00			090048 FLIGHT INSTRUMENT SCAN -A2
445.00	475.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
445.00	475.00	30.00	3L 02 MON VERTICAL SPEED INDIC
445.00	475.00	30.00	3A 10 MONITOR AIRSPEED INDIC
445.00	475.00	30.00	2K 14 MON MAP VIDEO

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
445.00	475.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
445.00	475.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
475.00			090048 FLIGHT INSTRUMENT SCAN -A2
475.00	505.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
475.00	505.00	30.00	3L 02 MON VERTICAL SPEED INDIC
475.00	505.00	30.00	3A 10 MONITOR AIRSPEED INDIC
475.00	505.00	30.00	2K 14 MON MAP VIDEO
475.00	505.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
475.00	505.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
505.00			090051 FLIGHT INSTRUMENT SCAN -A1
505.00	515.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
505.00	515.00	10.00	3L 02 MON VERTICAL SPEED INDIC
505.00	515.00	10.00	3A 10 MONITOR AIRSPEED INDIC
505.00	515.00	10.00	2K 14 MON MAP VIDEO
505.00	515.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
505.00	515.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
585.00			00EV08 C/P EXT VIS SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
440.00			00EV03 C/P EXT VIS SCAN
450.00			160002 TUNE ATIS -119.85
458.00	482.00	24.00	1A 15 MON VHF-1 COMM AUDIO
458.00	481.42	3.42	1P160001 MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	485.88	4.56	1P160002 FIVE HUNDRED SCAT- TERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.88	470.54	4.56	1P160003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARAL- LEL APPROACHES IN
475.10	479.66	4.56	1P160005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CON- TROLLER ON INITIAL
479.66	481.94	2.28	1P160006 CONTACT YOU HAVE IN- FORMATION LIMA.]
480.00			160048 MON ADF/RMI-2
480.00			168L05 CROSS FT HDB
483.00			00EV09 C/P EXT VIS SCAN
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P 13 MONITOR CALL-OUT
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
513.00			030007 ENGINE INSTRUMENT SCAN
519.00			180041 MON VOR/RMI-1
519.00	521.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			180095 VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16XX96 NASA 515.TURN LEFT HEADING 180.
523.00			180082 ENTER NEW HEADING IN MCP
523.00	525.50	2.50	2H 18 ROTATE TKA SEL KNOB
523.00	524.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
525.50	526.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
523.00			18BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70	1P 11 MONITOR CALL-OUT
550.00			00EV03 C/P EXT VIS SCAN
555.00			080061 FLIGHT INSTRUMENT SCAN -A1
555.00	565.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
555.00	565.00	10.00	3L 02 MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A 10 MONITOR AIRSPEED INDIC
555.00	565.00	10.00	2K 14 MON MAP VIDEO
555.00	565.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
555.00	565.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
565.00			180041 MON VOR/RMI-1
565.00	567.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			180042 MON ADF/RMI-1
569.00	571.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			180096 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P16XX98 NASA 515.12 MILES FROM OM.TURN LT HDB 110.MAINTAIN 5000 FT UNTIL CROSSING BAHRR
580.00	587.00	7.00	1P16ZZ98 CLEARED FOR ILS RUN- WAY 8 LEFT APPROACH. CONTACT TOWER ON 119.6 AT BAHRR.
575.00			180082 ENTER NEW HEADING IN MCP
575.00	577.50	2.50	2H 18 ROTATE TKA SEL KNOB
575.00	576.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
577.50	578.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
575.00			18BL07 TURN TO INTERCEPT FINAL APPR. COURSE

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
585.00			180083 ARM LAND MODE
585.00	597.13	2.13	2H 10 PRESS LAND MODE SW
587.20	588.25	1.05	2H 12 MON LAND MODE LT ORANGE - LAND MODE ARMED
597.00			180034 TUNE ATLANTA TOWER -119.5
600.00			180070 FLIGHT INSTRUMENT SCAN -A1, PILOT
600.00	610.00	10.00	2K 14 MON MAP VIDEO
600.00	610.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
600.00	610.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
600.00	610.00	10.00	2J 06 MON FLT PATH ANGLE INDIC
600.00	610.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
600.00	610.00	10.00	2J 01 MON ROLL ATT INDIC
600.00	610.00	10.00	2J 18 MON PITCH REF INDIC
600.00	610.00	10.00	3A 10 MONITOR AIRSPEED INDIC
607.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
610.00			180084 CAPTURE AN ALT IN ALT SEL MODE
610.00	610.78	0.78	2H 28 MONITOR ALT ENG MODE LT GREEN - ALT ENG MODE ENGAGED
611.00	611.77	0.77	2H 25 MONITOR FPA SEL MODE LT DARK - FPA SEL MODE DISENGAGED
610.00			180108 LEVEL OFF AT 8000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
613.00			180085 ENTER NEW SPEED IN CAS WINDOW
613.00	615.45	2.45	2H 47 ROTATE CAS ENF KNOB
613.00	614.04	1.04	2H 48 READ CAS ENG VALUE ON DIGITAL INDIC
615.50	616.28	0.78	2H 44 MON CAS ENG MODE LT GREEN - CAS MODE ENGAGED
623.00			180086 CAPTURE LOCALIZER
623.00	625.19	2.19	2J 18 MON ILS BOX INDIC
625.00	626.50	1.50	1P 02 MONITOR CALL-OUT
625.00	625.77	0.77	2H 18 MON TKA SEL MODE LT DARK - TKA SEL MODE DISENGAGED
626.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
626.00	656.00	30.00	2K 14 MON MAP VIDEO
626.00	656.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
626.00	656.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
626.00	656.00	30.00	2J 18 MON ILS BOX INDIC
626.00	656.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
626.00	656.00	30.00	2J 01 MON ROLL ATT INDIC
626.00	656.00	30.00	2J 18 MON PITCH REF INDIC
626.00	656.00	30.00	3A 10 MONITOR AIRSPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
627.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
643.00			180045 ANNUNCIATOR RECALL
647.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
655.00			180041 MON VOR/RMI-1
655.00	657.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			180042 MON ADF/RMI-1
657.00	659.00	2.00	5D 25 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			180048 MON ADF/RMI-2
660.00			180109 REACH 210 KCAS
660.00			180087 CAPTURE GLIDE SLOPE
660.00	662.19	2.19	2J 13 MON ILS BOX INDIC
662.00	663.05	1.05	2H 11 MON LAND MODE LT GREEN - LAND MODE ENGAGED
664.00			180081 CONTACT TOWER FOR FINAL LANDING CLEAR- ANCE
674.40	681.40	7.00	1B 19 MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P180040 MON RADIO COMM - ENASA 812, NO. 3 FOR 81,DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P180041 AT NINE,CLEARED TO LAND RW 8L.
684.00			180110 CROSS SAHRR
684.00			180011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P180058 CALL OUT -(FLAPS 1)
689.00	689.70	0.70	1P 10 MONITOR CALL-OUT
691.00	691.44	0.44	7F 30 MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F 25 MON ENG NO 1 EPR IND
670.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
670.00	700.00	30.00	2K 14 MON MAP VIDEO
670.00	700.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
670.00	700.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
670.00	700.00	30.00	2J 13 MON ILS BOX INDIC
670.00	700.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
670.00	700.00	30.00	2J 01 MON ROLL ATT INDIC
670.00	700.00	30.00	2J 19 MON PITCH REF INDIC
670.00	700.00	30.00	3A 10 MONITOR AIRSPEED INDIC
685.00			180111 REACH 190 KCAS
684.00			180017 SET FLAPS TO FLAPS 5
684.00	694.70	0.70	1P180061 CALL OUT -(FLAPS 5)
694.00			180018 FLAP SET PROCEDURE
700.03	700.73	0.70	1P 10 MONITOR CALL-OUT
701.00	701.44	0.44	7F 25 MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F 30 MON ENG NO 2 EPR IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME
699.00		
700.00		
700.00	730.00	30.00
700.00	730.00	30.00
700.00	730.00	30.00
700.00	730.00	30.00
700.00	730.00	30.00
700.00	730.00	30.00
700.00	730.00	30.00
708.00		
710.00		
720.00		
730.00		
730.00		
730.00	735.00	5.00
740.00		
740.00	743.28	3.28
740.00	740.73	0.73
744.00		
745.00		
745.00	775.00	30.00
745.00	775.00	30.00
745.00	775.00	30.00
745.00	775.00	30.00
745.00	775.00	30.00
745.00	775.00	30.00
745.00	775.00	30.00
745.00	775.00	30.00
745.00		
748.00		
755.00		
785.00		
775.00		
775.00		
775.00	805.00	30.00
775.00	805.00	30.00
775.00	805.00	30.00
775.00	805.00	30.00

EVENT/PROCEDURE TASK		
030007	ENGINE INSTRUMENT SCAN	
180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
2K	14	MON MAP VIDEO
2K	48	MON STRAIGHT TREND VECTOR SYMBOL
2K	33	MON CURVED TREND VECTOR SYMBOLS
2J	13	MON ILS BOX INDIC
2J	04	MON FLT PATH ACCEL INDIC
2J	01	MON ROLL ATT INDIC
2J	19	MON PITCH REF INDIC
3A	10	MONITOR AIRSPEED INDIC
188L12	REACH 170 KCAS	
180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
00EV21	PILOT EXT VIS SCAN	
8A	10	PILOT EXTERNAL VISION SCAN
180068	SET SPEED BRAKES	
4F	02	SET SPEED BRAKE LEVER TO ARM
4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
180048	MON ADF/RMI-2	
180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
2K	14	MON MAP VIDEO
2K	48	MON STRAIGHT TREND VECTOR SYMBOL
2K	33	MON CURVED TREND VECTOR SYMBOLS
2J	13	MON ILS BOX INDIC
2J	04	MON FLT PATH ACCEL INDIC
2J	01	MON ROLL ATT INDIC
2J	19	MON PITCH REF INDIC
3A	10	MONITOR AIRSPEED INDIC
188L13	CROSS REIFF	
180070	SET AUTO BRAKES	
00EV01	C/P EXT VIS SCAN	
180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
2K	14	MON MAP VIDEO
2K	48	MON STRAIGHT TREND VECTOR SYMBOL
2K	33	MON CURVED TREND VECTOR SYMBOLS
2J	13	MON ILS BOX INDIC



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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
775.00	805.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
775.00	805.00	30.00	2J 01 MON ROLL ATT INDIC
775.00	805.00	30.00	2J 19 MON PITCH REF INDIC
775.00	805.00	30.00	3A 10 MONITOR AIRSPEED INDIC
800.00			160058 REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10 MONITOR CALL-OUT
805.00			00EY21 PILOT EXT VIS SCAN
805.00	810.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
808.00			160018 FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10 MONITOR CALL-OUT
815.00	815.44	0.44	7F 26 MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30 MON ENG NO 2 EPR IND
808.00			160026 SET FLAPS TO FLAPS 16
808.00	808.70	0.70	1P160062 CALL OUT -(FLAPS 16)
812.00			160042 MON ADF/RMI-1
812.00	814.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 28 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160058 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160076 CALL OUT -(GEAR DOWN AND LANDING CHECK- LIST)
818.00	817.10	2.10	3N 03 START ELAPSED TIME INDIC
815.00			168L14 CROSS CATTA LOW-GEAR THEN EXTENDED AND 165 KCAS MAINTAINED
815.00			160048 MON RADIO ALTIMETER
820.00			160080 EXTEND LANDING GEAR
820.00			160071 FLIGHT INSTRUMENT SCAN -A2, PILOT
820.00	850.00	30.00	2K 14 MON MAP VIDEO
820.00	850.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
820.00	850.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
820.00	880.00	30.00	2J 13 MON ILS BOX INDIC
820.00	850.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
820.00	850.00	30.00	2J 01 MON ROLL ATT INDIC
820.00	850.00	30.00	2J 19 MON PITCH REF INDIC
820.00	850.00	30.00	3A 10 MONITOR AIRSPEED INDIC
845.00			160082 LANDING CHECKLIST
847.00	847.80	0.80	1P 10 MONITOR CALL-OUT
847.80	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P160079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
858.20	858.60	0.40	1P 14 MONITOR CALL-OUT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
050.00	050.70	1.10	1P 12 MONITOR CALL-OUT
050.00			00EV21 PILOT EXT VIS SCAN
050.00	055.00	5.00	0A 10 PILOT EXTERNAL VISION SCAN
055.00			100071 FLIGHT INSTRUMENT SCAN -A2, PILOT
055.00	085.00	30.00	2K 14 MON MAP VIDEO
055.00	085.00	30.00	2K 40 MON STRAIGHT TREND VECTOR SYMBOL
055.00	085.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
055.00	085.00	30.00	2J 13 MON ILS BOX INDIC
055.00	085.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
055.00	085.00	30.00	2J 01 MON ROLL ATT INDIC
055.00	085.00	30.00	2J 19 MON PITCH REF INDIC
055.00	085.00	30.00	3A 10 MONITOR AIRSPEED INDIC
085.00			00EV03 C/P EXT VIS SCAN
077.00			100073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
080.00			030007 ENGINE INSTRUMENT SCAN
085.00			100071 FLIGHT INSTRUMENT SCAN -A2, PILOT
085.00	015.00	30.00	2K 14 MON MAP VIDEO
085.00	015.00	30.00	2K 40 MON STRAIGHT TREND VECTOR SYMBOL
085.00	015.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
085.00	015.00	30.00	2J 13 MON ILS BOX INDIC
085.00	015.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
085.00	015.00	30.00	2J 01 MON ROLL ATT INDIC
085.00	015.00	30.00	2J 19 MON PITCH REF INDIC
085.00	015.00	30.00	3A 10 MONITOR AIRSPEED INDIC
085.00			100049 MON RADIO ALTIMETER
090.00			00EV04 C/P EXT VIS SCAN
093.00			100065 DESCEND THRU -DECISION HEIGHT
095.50	096.30	0.80	1P 11 MONITOR CALL-OUT
015.00			00EV21 PILOT EXT VIS SCAN
015.00	020.00	5.00	0A 10 PILOT EXTERNAL VISION SCAN
020.00			100071 FLIGHT INSTRUMENT SCAN -A2, PILOT
020.00	050.00	30.00	2K 14 MON MAP VIDEO
020.00	050.00	30.00	2K 40 MON STRAIGHT TREND VECTOR SYMBOL
020.00	050.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
020.00	050.00	30.00	2J 13 MON ILS BOX INDIC
020.00	050.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
020.00	050.00	30.00	2J 01 MON ROLL ATT INDIC
020.00	050.00	30.00	2J 19 MON PITCH REF INDIC
020.00	050.00	30.00	3A 10 MONITOR AIRSPEED INDIC

ORIGINAL PAGE IS  
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
925.00			160064 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			160115 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
940.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
941.00			160116 CROSS RW THRESHOLD
950.00			160117 TOUCHDOWN
950.00			160036 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	8A 11 PILOT EXTERNAL VISION SCAN
950.00	980.00	30.00	2J 15 MON TV VIDEO
980.00	980.00	30.00	2J 40 MON EADI RWY
980.00	980.00	30.00	2J 41 MON EADI DRIFT INDIC
980.00	980.00	30.00	7F 25 MON ENG NO 1 EPR IND
980.00	980.00	30.00	7F 30 MON ENG NO 2 EPR IND
980.00			160036 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	8A 11 PILOT EXTERNAL VISION SCAN
980.00	1010.00	30.00	2J 15 MON TV VIDEO
980.00	1010.00	30.00	2J 40 MON EADI RWY
980.00	1010.00	30.00	2J 41 MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F 25 MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F 30 MON ENG NO 2 EPR IND
1010.00			160037 DISENGAGE AGCS
1010.00	1012.13	2.13	2H 10 PRESS LAND MODE SW
1012.13	1013.18	1.05	2H 13 MON LAND MODE LT DARK - LAND MODE DISENGAGED
1013.18	1014.62	1.44	2H 01 PRESS ATT CWS MODE SW
1014.62	1015.67	1.05	2H 02 MON ATT CWS MODE LT GREEN - ATT CWS ENGAGED
1015.67	1017.01	1.34	2H 08 MON AUTO MODE LT DARK - AUTO MODE DISENGAGED
1010.00	1020.00	10.00	4A 64 MANUALLY CONTROL A/C
1020.00	1025.00	5.00	4A 64 MANUALLY CONTROL A/C
1010.00			00EV23 PILOT EXT VIS SCAN
1010.00	1025.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
984.00			160071 HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1B 18 MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P160087 MON RADIO COMM - [NASA 516.EXIT RUN- WAY NEXT INTERSEC- TION. CONTACT GROUND
987.50	990.00	2.50	1P160088 POINT NINER WHEN CLEAR OF RUNWAY, OVER]
1004.00	1007.50	3.50	1B 18 MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P160091 MON RADIO COMM - [NASA 516. ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST-SOUTH-
1007.50	1008.50	1.00	1P160092 WEST TAXIWAY, OVER]

\*\*\*\*\*  
 \* UNSHIFTED \*  
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\*\*\*\*\*  
 \* MISSION SCENARIO REPORT \*  
 \* MISSION - MD-S DATA LINK \*  
 \* ILS AP-BASE LN. \*  
 \* CONFIGURATION - 737 ADVCND FLT DCK \*  
 \* CREWMEMBER - PILOT \*  
 \*\*\*\*\*

NOV10 1986

TIME INTERVAL (SECS)  
 SINCE MISSION START  
 BEGINNING END

TOTAL  
 ACTIVITY  
 TIME

FLIGHT PHASE  
 EVENT/PROCEDURE  
 TASK

18DL DATA LINK AFD ILS AP

0.00  
 0.00

18DL01 CROSS LOGEN INTERSEC  
 TION AT 250 KCAS AND  
 14000 FEET.ATL CENTR  
 HAS PREVIOUSLY INSTR  
 UCTED NASA 615 TO  
 MONITOR ATL APPROACH  
 ON 126.9 AT LOGEN.  
 VHF-2R HAS BEEN SET.

0.00

18DL90 MONITOR ATL APPROACH  
 ON 126.9/VHF-2R

0.00

180080 DROP OUT OF HOR  
 AND VERT PATH TO  
 FPA.TKA.AND CAS  
 AUTO FLT MODES  
 ENTER FPA IN MCP

0.00

0.78

0.78

2H 38 MON HOR PATH MODE LT  
 DARK - HOR PATH MODE  
 DISENGAGED

0.00

0.78

0.78

2H 42 MON VERT PATH MODE  
 LT DARK - VERT PATH  
 MODE DISENGAGED

0.80

2.14

1.34

2H 08 MON AUTO MODE LT  
 GREEN - AUTO MODE  
 ENGAGED

2.10

2.87

0.77

2H 16 MON TKA SEL MODE LT  
 GREEN - TKA SEL MODE  
 ENGAGED

2.10

2.87

0.77

2H 22 MONITOR FPA SEL MODE  
 LT GREEN - FPA SEL  
 MODE ENGAGED

2.90

5.35

2.46

2H 26 ROTATE FPA SEL KNOB

2.90

3.67

0.77

2H 24 MONITOR FPA SEL MODE  
 LT BLUE - FPA SEL  
 MODE PRESELECTED

4.30

5.38

1.08

2H 27 READ FPA SEL VALUE  
 ON DIGITAL INDIC

5.40

7.40

2.00

2K 32 MON ALT/RNG SYMBOLS

7.40

8.80

1.40

2H 21 PRESS FPA SEL MODE  
 SW

8.80

9.57

0.77

2H 22 MONITOR FPA SEL MODE  
 LT GREEN - FPA SEL  
 MODE ENGAGED

10.00

080048 FLIGHT INSTRUMENT  
 SCAN -A2

10.00

40.00

30.00

2J 02 MON PITCH ATTITUDE  
 INDIC

10.00

40.00

30.00

3L 02 MON VERTICAL SPEED  
 INDIC

10.00

40.00

30.00

3A 10 MONITOR AIRSPEED  
 INDIC

10.00

40.00

30.00

2K 14 MON MAP VIDEO

10.00

40.00

30.00

2K 48 MON STRAIGHT TREND  
 VECTOR SYMBOL

10.00

40.00

30.00

2K 33 MON CURVED TREND  
 VECTOR SYMBOLS

40.00

080048 FLIGHT INSTRUMENT  
 SCAN -A2

40.00

70.00

30.00

2J 02 MON PITCH ATTITUDE  
 INDIC

40.00

70.00

30.00

3L 02 MON VERTICAL SPEED  
 INDIC

40.00

70.00

30.00

3A 10 MONITOR AIRSPEED  
 INDIC

ORIGINAL PAGE IS  
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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
40.00	70.00	30.00	2K 14 MON MAP VIDEO
40.00	70.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
40.00	70.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
70.00			080048 FLIGHT INSTRUMENT SCAN -A2
70.00	100.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
70.00	100.00	30.00	3L 02 MON VERTICAL SPEED INDIC
70.00	100.00	30.00	3A 10 MONITOR AIRSPEED INDIC
70.00	100.00	30.00	2K 14 MON MAP VIDEO
70.00	100.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
70.00	100.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
15.00			180013 SET MAY-1 TO RUNWAY 3L ILS -109.3
31.50	34.00	2.50	1P 12 MONITOR CALL-OUT
34.00	36.25	2.25	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
80.00			00EV30 PILOT EXT VIS SCAN
80.00	110.00	80.00	8A 12 PILOT EXTERNAL VISION SCAN
38.00			180039 SET ADF-1 TO CATTA -375KC
45.73	47.23	1.50	1P 02 MONITOR CALL-OUT
49.00			180040 SET ADF-2 TO FLANC -344
84.00	85.50	1.50	1P 02 MONITOR CALL-OUT
58.00			180038 SET DECISION HEIGHT ON RADIO ALTIMETER
84.00			030007 ENGINE INSTRUMENT SCAN
70.00			180005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P180043 CALL OUT-(DESCENT AND APPROACH CHECK- LIST)
85.00	86.00	1.00	1P 10 MONITOR CALL-OUT
87.00	87.80	0.80	1P 07 MONITOR REPORT
90.00	91.80	1.80	1P 13 MONITOR CALL-OUT
98.00	98.40	0.40	1P 16 MONITOR REPORT
100.00			180006 DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P 11 MONITOR CALL-OUT
103.00	106.54	3.54	7M 03 SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M 06 SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P180049 CALL OUT (FLIGHT)
111.00	112.10	1.10	1P 12 MONITOR CALL-OUT
114.20	114.80	0.60	1P 18 MONITOR REPORT
116.50	117.90	1.40	1P 12 MONITOR CALL-OUT
123.40	124.70	1.30	1P 09 MONITOR REPORT
126.00			180007 DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02 MONITOR CALL-OUT
146.00	147.90	1.90	1P 14 MONITOR CALL-OUT
148.00	150.57	2.57	3A 07 MON V-REF BUG SETTING

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
148.00	150.57	2.57	3A 05 SET V-REF BUG
151.00	154.00	3.00	3A 13 CAPT CHECK F.O.<8 V-REF BUG SETTING
154.00	155.60	1.60	1P 08 MONITOR REPORT
157.60	158.90	1.30	1P 02 MONITOR CALL-OUT
165.00			030007 ENGINE INSTRUMENT SCAN
150.00			00EV05 C/P EXT VIS SCAN
185.00			080051 FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
195.00	195.00	10.00	3L 02 MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K 14 MON MAP VIDEO
185.00	195.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
195.00			160048 MON ADF/RMI-2
195.00			18DL01 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	198.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENSON
198.60	198.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PRDG) AMBER
200.40	210.40	10.00	1D16AA01 MONITOR UPLINK CALL- OUT FROM COPILOT
200.00			18DL01 ARM NEW DL MCP ALT
200.00	200.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
200.80	201.88	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
201.88	203.28	1.42	2H 28 PRESS ALT ENG MODE S SW
203.28	204.06	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00			18BL02 BEGIN TURN TO DOWN- WIND LEG
205.00			18DL02 ENGAGE DATA LINKED HEADING IN MCP
205.00	205.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
205.80	206.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
206.90	208.31	1.41	2H 14 PRESS TKA SEL MODE SW
208.30	209.07	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			18BL03 DESCEND THRU 11000.
210.00			080051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO

ORIGINAL PAGE IS  
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
210.00	220.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
218.00			180092 TUNE ATL APPROACH ON 127.25
226.00			16DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
220.00	250.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L 02 MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A 10 MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K 14 MON MAP VIDEO
220.00	250.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
240.00			00EV09 C/P EXT VIS SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L 02 MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A 10 MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K 14 MON MAP VIDEO
250.00	280.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L 02 MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A 10 MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K 14 MON MAP VIDEO
280.00	310.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L 02 MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A 10 MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K 14 MON MAP VIDEO
310.00	340.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L 02 MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
285.00			030007 ENGINE INSTRUMENT SCAN
285.00			00EV09 C/P EXT VIS SCAN
340.00			00EV04 C/P EXT VIS SCAN
383.00			030007 ENGINE INSTRUMENT SCAN
370.00			16BL04 DESCEND THRU 8600.
370.00			16DL94 ALTITUDE STEP DOWN
370.00	371.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
371.60	373.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PRGB] AMBER
375.40	379.40	4.00	1D16AA94 MONITOR UPLINK CALL- OUT FROM COPILOT
375.00			16DL81 ARM NEW DL MCP ALT
375.00	376.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
375.80	376.88	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
376.88	378.28	1.42	2H 28 PRESS ALT ENG MODE S SW
378.28	379.06	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			090048 FLIGHT INSTRUMENT SCAN -A2
385.00	415.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
385.00	415.00	30.00	3L 02 MON VERTICAL SPEED INDIC
385.00	415.00	30.00	3A 10 MONITOR AIRSPEED INDIC
385.00	415.00	30.00	2K 14 MON MAP VIDEO
385.00	415.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
385.00	415.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
415.00			090048 FLIGHT INSTRUMENT SCAN -A2
415.00	445.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
415.00	445.00	30.00	3L 02 MON VERTICAL SPEED INDIC
415.00	445.00	30.00	3A 10 MONITOR AIRSPEED INDIC
415.00	445.00	30.00	2K 14 MON MAP VIDEO
415.00	445.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
415.00	445.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
445.00			090048 FLIGHT INSTRUMENT SCAN -A2
445.00	475.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
445.00	475.00	30.00	3L 02 MON VERTICAL SPEED INDIC



SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
445.00	475.00	30.00	3A 10 MONITOR AIRSPEED INDIC
445.00	475.00	30.00	2K 14 MON MAP VIDEO
445.00	475.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
445.00	475.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
475.00			090048 FLIGHT INSTRUMENT SCAN -A2
475.00	505.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
475.00	505.00	30.00	3L 02 MON VERTICAL SPEED INDIC
475.00	505.00	30.00	3A 10 MONITOR AIRSPEED INDIC
475.00	505.00	30.00	2K 14 MON MAP VIDEO
475.00	505.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
475.00	505.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
505.00			090051 FLIGHT INSTRUMENT SCAN -A1
505.00	515.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
505.00	515.00	10.00	3L 02 MON VERTICAL SPEED INDIC
505.00	515.00	10.00	3A 10 MONITOR AIRSPEED INDIC
505.00	515.00	10.00	2K 14 MON MAP VIDEO
505.00	515.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
505.00	515.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
585.00			00EY08 C/P EXT VIS SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
450.00			16DL02 RECEIVE ATL ETIS TERMINAL INFORMATION
458.80	460.20	1.40	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
460.20	462.20	2.00	1D16XX08 MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
460.00			16DL05 CROSS FT NDB
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P 13 MONITOR CALL-OUT
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL
513.00			030007 ENGINE INSTRUMENT SCAN
519.00			160041 MON VOR/RMI-1
519.00	521.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			16DL95 VECTOR FOR BASE LEG
520.00	521.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
521.60	523.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
525.40	528.40	3.00	1D18AA85 MONITOR UPLINK CALL- OUT FROM COPILOT
523.00			18DL82 ENGAGE DATA LINKED HEADING IN MCP
523.00	523.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
523.80	524.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
524.90	528.31	1.41	2H 14 PRESS TKA SEL MODE SW
528.30	527.07	0.77	2H 16 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
523.00			18BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70	1P 11 MONITOR CALL-OUT
550.00			00EV03 C/P EXT VIS SCAN
555.00			090051 FLIGHT INSTRUMENT SCAN -A1
556.00	565.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
555.00	565.00	10.00	3L 02 MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A 10 MONITOR AIRSPEED INDIC
555.00	565.00	10.00	2K 14 MON MAP VIDEO
555.00	565.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
555.00	565.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
565.00			160041 MON VOR/RMI-1
565.00	567.00	2.00	5B 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00	5B 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
568.00			160042 MON ADF/RMI-1
568.00	571.00	2.00	5D 26 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
568.00	571.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			18DL98 VECTOR TO FINAL APPR
570.00	571.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATTENSON
571.80	573.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
575.40	584.40	9.00	1D18AA86 MONITOR UPLINK CALL- OUT FROM COPILOT
584.40	591.40	7.00	1D18AA87 MONITOR UPLINK CALL- OUT FROM COPILOT
575.00			18DL82 ENGAGE DATA LINKED HEADING IN MCP
575.00	575.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
575.80	576.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
576.90	578.31	1.41	2H 14 PRESS TKA SEL MODE SW
578.30	579.07	0.77	2H 16 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
575.00			18BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			180083 ARM LAND MODE

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
585.00	587.13	2.13	2H 10 PRESS LAND MODE SW
587.20	588.25	1.05	2H 12 MON LAND MODE LT ORANGE - LAND MODE ARMED
597.00			180034 TUNE ATLANTA TOWER -119.5
600.00			180070 FLIGHT INSTRUMENT SCAN -A1, PILOT
600.00	610.00	10.00	2K 14 MON MAP VIDEO
600.00	610.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
600.00	610.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
600.00	610.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
600.00	610.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
600.00	610.00	10.00	2J 01 MON ROLL ATT INDIC
600.00	610.00	10.00	2J 19 MON PITCH REF INDIC
600.00	610.00	10.00	3A 10 MONITOR AIRSPEED INDIC
607.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
610.00			180084 CAPTURE AN ALT IN ALT SEL MODE
610.00	610.78	0.78	2H 29 MONITOR ALT ENG MODE LT GREEN - ALT ENG MODE ENGAGED
611.00	611.77	0.77	2H 25 MONITOR FPA SEL MODE LT DARK - FPA SEL MODE DISENGAGED
610.00			168L08 LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
613.00			180085 ENTER NEW SPEED IN CAS WINDOW
613.00	615.46	2.46	2H 47 ROTATE CAS ENG KNOB
613.00	614.04	1.04	2H 48 READ CAS ENG VALUE ON DIGITAL INDIC
615.50	616.28	0.78	2H 44 MON CAS ENG MODE LT GREEN - CAS MODE ENGAGED
623.00			180086 CAPTURE LOCALIZER
623.00	625.19	2.19	2J 13 MON ILS BOX INDIC
625.00	626.30	1.30	1P 02 MONITOR CALL-OUT
625.00	625.77	0.77	2H 18 MON TKA SEL MODE LT DARK - TKA SEL MODE DISENGAGED
626.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
626.00	636.00	30.00	2K 14 MON MAP VIDEO
626.00	636.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
626.00	636.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
626.00	636.00	30.00	2J 13 MON ILS BOX INDIC
626.00	636.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
626.00	636.00	30.00	2J 01 MON ROLL ATT INDIC
626.00	636.00	30.00	2J 19 MON PITCH REF INDIC
626.00	636.00	30.00	3A 10 MONITOR AIRSPEED INDIC
627.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
637.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
643.00			160045 ANNUNCIATOR RECALL
647.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
655.00			160041 MON VOR/RMI-1
655.00	657.00	2.00	5G 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			160042 MON ADF/RMI-1
657.00	659.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			160048 MON ADF/RMI-2
660.00			168L09 REACH 210 KCAS
660.00			180087 CAPTURE GLIDE SLOPE
660.00	662.19	2.19	2J 13 MON ILS BOX INDIC
662.00	663.05	1.05	2H 11 MON LAND MODE LT GREEN - LAND MODE ENGAGED
664.00			16DL60 MONITOR ATL TOWER ON 119.5/VHF-2R
670.00			16DL61 LANDING CLEARANCE
670.00	671.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
671.60	673.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
675.40	685.40	10.00	1D16AA40 MONITOR UPLINK CALL- OUT FROM COPILOT
684.00			168L10 CROSS BANRR
684.00			160011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160058 CALL OUT -(FLAPS 1)
689.00	689.70	0.70	1P 10 MONITOR CALL-OUT
691.00	691.44	0.44	7F 30 MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F 25 MON ENG NO 1 EPR IND
670.00			160071 FLIGHT INSTRUMENT SCAN -A2, PILOT
670.00	700.00	30.00	2K 14 MON MAP VIDEO
670.00	700.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
670.00	700.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
670.00	700.00	30.00	2J 13 MON ILS BOX INDIC
670.00	700.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
670.00	700.00	30.00	2J 01 MON ROLL ATT INDIC
670.00	700.00	30.00	2J 19 MON PITCH REF INDIC
670.00	700.00	30.00	3A 10 MONITOR AIRSPEED INDIC
685.00			168L11 REACH 190 KCAS
694.00			160017 SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160061 CALL OUT -(FLAPS 5)
694.00			160018 FLAP SET PROCEDURE
700.03	700.73	0.70	1P 10 MONITOR CALL-OUT
701.00	701.44	0.44	7F 25 MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F 30 MON ENG NO 2 EPR IND

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
699.00			030007 ENGINE INSTRUMENT SCAN
700.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
700.00	730.00	30.00	2K 14 MON MAP VIDEO
700.00	730.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
700.00	730.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
700.00	730.00	30.00	2J 13 MON ILS BOX INDIC
700.00	730.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
700.00	730.00	30.00	2J 01 MON ROLL ATT INDIC
700.00	730.00	30.00	2J 18 MON PITCH REF INDIC
700.00	730.00	30.00	3A 10 MONITOR AIRSPEED INDIC
706.00			168L12 REACH 170 KCAS
710.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
720.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00			00EV21 PILOT EXT VIS SCAN
730.00	735.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
740.00			180069 SET SPEED BRAKES
740.00	743.28	3.28	4F 02 SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F 07 MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			180048 MON ADF/RMI-2
745.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00	775.00	30.00	2K 14 MON MAP VIDEO
745.00	775.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
745.00	775.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
745.00	775.00	30.00	2J 13 MON ILS BOX INDIC
745.00	775.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
745.00	775.00	30.00	2J 01 MON ROLL ATT INDIC
745.00	775.00	30.00	2J 18 MON PITCH REF INDIC
745.00	775.00	30.00	3A 10 MONITOR AIRSPEED INDIC
745.00			168L13 CROSS REIFF
748.00			180070 SET AUTO BRAKES
753.00			00EV01 C/P EXT VIS SCAN
765.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
775.00	805.00	30.00	2K 14 MON MAP VIDEO
775.00	805.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
775.00	805.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
775.00	805.00	30.00	2J 13 MON ILS BOX INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
775.00	805.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
775.00	805.00	30.00	2J 01 MON ROLL ATT INDIC
775.00	805.00	30.00	2J 18 MON PITCH REF INDIC
775.00	805.00	30.00	3A 10 MONITOR AIRSPEED INDIC
800.00			180058 REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10 MONITOR CALL-OUT
805.00			00EV21 PILOT EXT VIS SCAN
805.00	810.00	5.00	9A 10 PILOT EXTERNAL VISION SCAN
808.00			180018 FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10 MONITOR CALL-OUT
815.00	815.44	0.44	7F 25 MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30 MON ENG NO 2 EPR IND
808.00			180025 SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P180082 CALL OUT -(FLAPS 18)
812.00			180042 MON ADF/RMI-1
812.00	814.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 28 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			180058 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P180075 CALL OUT -(GEAR DOWN AND LANDING CHECK-LIST)
815.00	817.10	2.10	3H 03 START ELAPSED TIME INDIC
815.00			180114 CROSS CATTALOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			180048 MON RADIO ALTIMETER
820.00			180080 EXTEND LANDING GEAR
820.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
820.00	850.00	30.00	2K 14 MON MAP VIDEO
820.00	850.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
820.00	850.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
820.00	850.00	30.00	2J 13 MON ILS BOX INDIC
820.00	850.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
820.00	850.00	30.00	2J 01 MON ROLL ATT INDIC
820.00	850.00	30.00	2J 18 MON PITCH REF INDIC
820.00	850.00	30.00	3A 10 MONITOR AIRSPEED INDIC
845.00			180082 LANDING CHECKLIST
847.00	847.60	0.60	1P 10 MONITOR CALL-OUT
847.60	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P180079 CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
856.20	856.60	0.40	1P 14 MONITOR CALL-OUT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
858.80	859.70	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
860.00	865.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
865.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00	885.00	30.00	2K 14 MON MAP VIDEO
865.00	885.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
865.00	885.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
865.00	885.00	30.00	2J 13 MON ILS BOX INDIC
865.00	885.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
865.00	885.00	30.00	2J 01 MON ROLL ATT INDIC
865.00	885.00	30.00	2J 19 MON PITCH REF INDIC
865.00	885.00	30.00	3A 10 MONITOR AIRSPEED INDIC
865.00			00EV02 C/P EXT VIS SCAN
877.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
889.00			030007 ENGINE INSTRUMENT SCAN
885.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
885.00	915.00	30.00	2K 14 MON MAP VIDEO
885.00	915.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
885.00	915.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
885.00	915.00	30.00	2J 13 MON ILS BOX INDIC
885.00	915.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
885.00	915.00	30.00	2J 01 MON ROLL ATT INDIC
885.00	915.00	30.00	2J 19 MON PITCH REF INDIC
885.00	915.00	30.00	3A 10 MONITOR AIRSPEED INDIC
895.00			180049 MON RADIO ALTIMETER
900.00			00EV04 C/P EXT VIS SCAN
923.00			180085 DESCEND THRU -DECISION HEIGHT
925.58	926.38	0.80	1P 11 MONITOR CALL-OUT
915.00			00EV21 PILOT EXT VIS SCAN
915.00	920.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
920.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
920.00	950.00	30.00	2K 14 MON MAP VIDEO
920.00	950.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
920.00	950.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
920.00	950.00	30.00	2J 13 MON ILS BOX INDIC
920.00	950.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
920.00	950.00	30.00	2J 01 MON ROLL ATT INDIC
920.00	950.00	30.00	2J 19 MON PITCH REF INDIC
920.00	950.00	30.00	3A 10 MONITOR AIRSPEED INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
925.00			160064 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
940.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
941.00			16BL16 CROSS RW THRESHOLD
950.00			16BL17 TOUCHDOWN
950.00			180036 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	8A 11 PILOT EXTERNAL VISION SCAN
950.00	980.00	30.00	2J 18 MON TV VIDEO
950.00	980.00	30.00	2J 40 MON EADI RWY
950.00	980.00	30.00	2J 41 MON EADI DRIFT INDIC
950.00	980.00	30.00	7F 25 MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F 30 MON ENG NO 2 EPR IND
980.00			180036 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	8A 11 PILOT EXTERNAL VISION SCAN
980.00	1010.00	30.00	2J 18 MON TV VIDEO
980.00	1010.00	30.00	2J 40 MON EADI RWY
980.00	1010.00	30.00	2J 41 MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F 25 MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F 30 MON ENG NO 2 EPR IND
1010.00			180037 DISENGAGE AGCS
1010.00	1012.13	2.13	2H 10 PRESS LAND MODE SW
1012.13	1013.18	1.05	2H 13 MON LAND MODE LT DARK - LAND MODE DISENGAGED
1013.18	1014.62	1.44	2H 01 PRESS ATT CWS MODE SW
1014.62	1015.67	1.05	2H 02 MON ATT CWS MODE LT GREEN - ATT CWS ENGAGED
1015.67	1017.01	1.34	2H 09 MON AUTO MODE LT DARK - AUTO MODE DISENGAGED
1010.00	1020.00	10.00	4A 04 MANUALLY CONTROL A/C
1020.00	1025.00	5.00	4A 04 MANUALLY CONTROL A/C
1010.00			00EV23 PILOT EXT VIS SCAN
1010.00	1025.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
984.00			16DL71 HANDOFF TO GROUND
984.00	986.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENSON
986.60	987.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PROG) AMBER
989.40	997.40	8.00	1D16AA67 MONITOR UPLINK CALL- OUT FROM COPILOT
1000.00			16DL72 TUNE AND MONITOR ATL GRND ON 121.8/VHF-2L
1008.00			16DL73 TAXI CLEARANCE FROM



SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
1009.00	1010.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
1010.60	1012.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
1014.40	1019.40	5.00	1D16AA88 MONITOR UPLINK CALL- OUT FROM COPILOT

## **B.4 NORMAL ILS APPROACH—ADVANCED FLIGHT DECK**

### **Nonflying Pilot**

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\*\*\*\*\*  
 \* UNSHIFTED \*  
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\*\*\*\*\*  
 \* MISSION SCENARIO REPORT \*  
 \* MISSION - CURRENT NAS \*  
 \* ILS AP-BASE LN. \*  
 \* CONFIGURATION - 737 ADVCND FLT DCK \*  
 \* CREWMEMBER - COPILOT \*  
 \*\*\*\*\*

NOV10 1988

TIME INTERVAL (SECS)  
 SINCE MISSION START  
 BEGINNING END

TOTAL  
 ACTIVITY  
 TIME

FLIGHT PHASE  
 EVENT/PROCEDURE  
 TASK

0.00		
0.00		
0.00		
0.00	1.48	1.48
2.40	9.40	7.00
2.40	9.40	7.00
9.40	13.40	4.00
0.00		
10.00		
40.00		
70.00		
15.00		
15.00	21.00	6.00
21.00	26.00	5.00
26.00	31.08	5.08
26.00	29.00	3.00
29.00	31.08	2.08
31.50	34.40	2.90
31.50	33.77	2.27
60.00		
38.00		
38.00	41.00	3.00
41.00	41.77	0.77
41.77	43.75	1.98
43.75	45.73	1.98
45.73	47.23	1.50
49.00		

18BL BASELINE AFD ILS APP

18BL01	CROSS LOGEN INTERSECTION AT 250 KCAS AND 14000 FEET. ATL CENTR HAS PREVIOUSLY INSTR UCTED NASA 515 TO CONTACT ATL APPR AT LOGEN. VHF-2R HAS ALREADY BEEN TUNED TO CORRECT FREQ-126.9.
180080	CONTACT ATL APPROACH ON 126.9
1B 06	SET VHF-2 COMM TFR SW TO RIGHT
1A 26	ACTUATE COMM 2 PUSH-TO-TALK SW
1P16XX90	ATL APP. NASA 515 DESCENDING TO 11000 FT WITH INFO LIMA.
1P16YY80	NASA 515. ATL APPR. ROGER.
180080	DROP OUT OF HOR AND VERT PATH TO FPA. TRA. AND CAS AUTO FLT MODES ENTER FPA IN MCP
090048	FLIGHT INSTRUMENT SCAN -A2
090048	FLIGHT INSTRUMENT SCAN -A2
090048	FLIGHT INSTRUMENT SCAN -A2
180013	SET NAV-1 TO RUNWAY 8L ILS -109.3
8B 06	RETRIEVE CHARTS
8B160003	REVIEW CHARTS TO DETERMINE RUNWAY 08 ILS FREQ AND REQ VOR FREQ
SU 01	MON NAV-1 FREQ INDIC
SU 02	SET NAV-1 FREQ - WHOLE NO. 8
SU 03	SET NAV-1 FREQ - FRACTIONS
1P160050	CALL OUT -[RUNWAY 8L ILS IS ON NAV 1]
SH 02	MON VOR POINTER NO. 1 ON VOR/RMI 2 INDIC
00EV30	PILOT EXT VIS SCAN
180039	SET ADF-1 TO CATT A -375KC
SD 17	SET ADF NO. 1 BFO SW TO OFF
SD 22	MON ADF NO. 1 TUNING METER INDIC
SD 01	MONITOR ADF NO 1 FREQ INDIC
SD 02	SELECT ADF NO 1 FREQ INDIC
1P160065	CALL OUT -[CATT A ON ADF-1]
180040	SET ADF-2 TO FLANC -344

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B101

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
48.00	51.88	2.88	5E 17 SEL ADF NO.2 FREQ BAND .18-.40
52.00	53.98	1.98	5E 01 MON ADF NO 2 FREQ. INDIC
52.00	53.98	1.98	5E 02 SELECT ADF NO 2 FREQ
52.00	54.28	2.28	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P160086 CALL OUT -[FLANC ON ADF-2]
58.00			160038 SET DECISION HEIGHT ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 25 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
70.00			160005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.90	5.90	8B 02 RETREIVE CHECKLIST
78.00	83.00	5.00	8B 05 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P160044 CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P160045 CALL OUT-[NOT REQD]
88.00	90.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P160046 CALL OUT -[AIR CON- DITIONING AND PRES- SURIZATION]
92.00	94.87	2.87	7D 69 MON PASS CAB TEMP CONT SETTING
94.87	96.89	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.89	97.86	1.17	7E 08 MON LDG ALT CNTR
98.00	98.40	0.40	1P160047 CALL OUT [SET]
100.00			160006 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
102.00	102.90	0.90	1P180049 CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P 08 MONITOR REPORT
109.00	111.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P180050 CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G 17 SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P180051 CALL OUT -(ON)
114.50	116.50	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P180052 CALL OUT -(ALTIMETER AND INSTRUMENTS)
118.00	120.37	2.37	3H 02 MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H 05 F.O. CHECK CAPT'S ALTIMETER BARO SET AND INDICATED ALTITUDE
123.40	124.70	1.30	1P180053 CALL OUT-[SET AND CROSSCHECKED]
128.00			180007 DESCENT AND APPROACH CHECKLIST - 3
128.00	128.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P180054 CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004 RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B180001 DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	136.32	2.32	7F 26 SET ENG NO 1 EPR BUG
136.32	136.32	2.00	7F 27 MON ENG NO 1 EPR BUG
136.32	140.64	2.32	7F 28 SET ENG NO 2 EPR BUG
136.64	140.64	2.00	7F 29 MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B180002 DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A 07 MON V-REF BUG SETTING
148.00	148.57	2.57	3A 08 SET V-REF BUG
148.00	147.90	1.90	1P180055 CALL OUT -(V-REF IS XXX KNOTS)
151.00	154.00	3.00	3A 12 F.O. CHECK CAPT'S V-REF BUG SETTING
154.00	155.60	1.60	1P180056 CALL OUT -(BUGS SET AND CROSS-CHECKED)
155.60	157.60	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
155.60	158.90	1.30	1P180057 CALL OUT -(CHECKLIST COMPLETED)
157.80	160.60	3.00	8B 08 STOW CHECKLIST
160.60	162.60	2.00	8B010005 STOW FLIGHT PLANNING REF. DATA MANUAL
165.00			030007 ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 22 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	9A 11 PILOT EXTERNAL VISION SCAN
185.00			090051 FLIGHT INSTRUMENT SCAN -A1
195.00			180048 MON ADF/RMI-2
195.00	197.28	2.28	5E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			180091 HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX01 N 515, TURN RT HDG 270 DESCND AND MAINTAIN 8000 FT, CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
207.00	214.00	7.00	1P16YY01 515, ROGER, HDG 270. MAINTAIN 8000, APPR ON 127.25.
200.00			180081 ENTER/ARM NEW ALT IN MCP
200.00			180102 BEGIN TURN TO DOWN- WIND LEG
205.00			180082 ENTER NEW HEADNG IN MCP
210.00			180103 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
219.00			180092 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.5
221.88	223.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
226.00			180093 CONTACT ATL APPROACH ON 127.25
226.00	227.48	1.48	1B 05 SET VHF-2 COMM TFR SW TO LEFT
228.40	231.90	3.50	1A 10 ACT PUSH-TO-TALK SW
228.40	231.90	3.50	1P16XX93 ATL APPR, NASA 515 DESCENDING TO 8000.
231.90	235.90	4.00	1P16YY90 NASA 515, ATL APPR, ROGER.
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
240.00			00EV09 C/P EXT VIS SCAN

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
240.00	285.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
340.00			00EV04 C/P EXT VIS SCAN
340.00	360.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F 25 MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F 30 MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F 21 MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F 22 MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23 MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F 24 MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 18 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			168L04 DESCEND THRU 8600.
370.00			160094 ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94 NASA 515,DESCEND AND MAINTAIN 5000 FT.
375.00	378.50	3.50	1A 10 ACT PUSH-TO-TALK SW
375.00	378.50	3.50	1P16YY94 515,ROGER,MAINTAIN 5000.
378.00			180081 ENTER/ARM NEW ALT IN MCP
385.00			090048 FLIGHT INSTRUMENT SCAN -A2
415.00			090048 FLIGHT INSTRUMENT SCAN -A2
445.00			090048 FLIGHT INSTRUMENT SCAN -A2
473.00			090048 FLIGHT INSTRUMENT SCAN -A2
505.00			090051 FLIGHT INSTRUMENT SCAN -A1
385.00			00EV08 C/P EXT VIS SCAN
385.00	426.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 08 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 18 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03 C/P EXT VIS SCAN



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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
440.00	455.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
450.00			160002 TUNE ATIS -119.85
450.00	454.98	4.98	1A 07 MON VHF-1R FREQ IND
450.00	452.01	2.01	1A 08 SET VHF-1R FREQ. WHOLE NO.8
452.98	454.98	1.98	1A 09 SET VHF-1R FREQ - FRACTIONS
455.00	457.39	2.39	1A 06 SET VHF-1 COMM TFR SW TO RIGHT
458.43	457.95	1.52	1A 17 SET COMM 2 VHF-1 COMM RECVR SW TO ON
458.00	462.00	24.00	1A 15 MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001 MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002 FIVE HUNDRED SCAT- TERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003 TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	473.10	4.56	1P160004 . ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARAL- LEL APPROACHES IN
473.10	479.88	4.56	1P160005 OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE COM- TROLLER ON INITIAL
479.88	481.94	2.28	1P160006 CONTACT YOU HAVE IN- FORMATION LIMA.]
480.00			160048 MON ADF/RMI-2
480.00	482.28	2.28	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
480.00			18BL05 CROSS FT NDB
485.00			00EY09 C/P EXT VIS SCAN
485.00	510.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043 CALL OUT-(DESCENT AND APPROACH CHECK- LIST)
484.00			140032 ALTIMETER BARO SET PROC.
484.00	488.85	2.85	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	488.85	2.85	3H 03 SET ALTIMETER BARO SETTING CONTROL
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24 MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
515.20	515.64	0.44	7F 00 MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 16 MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
516.52	516.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041 MON VOR/RMI-1
520.00			160095 VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16XX95 NASA 515, TURN LEFT HEADING 180.
525.00	528.50	3.50	1A 10 ACT PUSH-TO-TALK SW
525.00	528.50	3.50	1P16YY95 515, ROGER, HEADING 180.
523.00			160082 ENTER NEW HEADNG IN MCP
523.00			168L06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140046 CALL OUT - (1000 FEET TO LEVEL OFF)
550.00			00EV03 C/P EXT VIS SCAN
550.00	565.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090031 FLIGHT INSTRUMENT SCAN -A1
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			160096 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P16XX96 NASA 515, 12 MILES FROM OM, TURN LT HDG 110, MAINTAIN 8000 FT UNTIL CROSSING BAHRR
587.00	594.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
587.00	594.00	7.00	1P16YY96 515, ROGER, CLEARED FOR ILS 8 LEFT APPR, TOWER AT BAHRR.
580.00	587.00	7.00	1P16ZZ96 CLEARED FOR ILS RUN- WAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			160082 ENTER NEW HEADNG IN MCP
575.00			168L07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			160083 ARM LAND MODE
587.00			160034 TUNE ATLANTA TOWER -119.5
587.00	601.88	4.88	1B 07 MON VHF-2R FREQ IND
587.00	599.88	2.88	1B 08 SET VHF-2R FREQ - WHOLE NO.5
599.88	601.88	1.98	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			160070 FLIGHT INSTRUMENT SCAN -A1, PILOT

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
807.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
807.00	817.00	10.00	2K 14 MON MAP VIDEO
807.00	817.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
807.00	817.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
807.00	817.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
807.00	817.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
807.00	817.00	10.00	2J 01 MON ROLL ATT INDIC
807.00	817.00	10.00	2J 19 MON PITCH REF INDIC
807.00	817.00	10.00	3A 10 MONITOR AIRSPEED INDIC
810.00			180084 CAPTURE AN ALT IN ALT SEL MODE
810.00			180108 LEVEL OFF AT 8000 FT BEGIN DECEL FROM 250 TO 210 KCAS
817.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
817.00	827.00	10.00	2K 14 MON MAP VIDEO
817.00	827.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
817.00	827.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
817.00	827.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
817.00	827.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
817.00	827.00	10.00	2J 01 MON ROLL ATT INDIC
817.00	827.00	10.00	2J 19 MON PITCH REF INDIC
817.00	827.00	10.00	3A 10 MONITOR AIRSPEED INDIC
813.00			180085 ENTER NEW SPEED IN CAS WINDOW
823.00			180086 CAPTURE LOCALIZER
823.00	825.19	2.19	2J 13 MON ILS BOX INDIC
826.00	826.30	1.30	1P180087 CALL OUT -(LOCALIZER ALIVE)
826.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
827.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
827.00	837.00	10.00	2K 14 MON MAP VIDEO
827.00	837.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
827.00	837.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
827.00	837.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
827.00	837.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
827.00	837.00	10.00	2J 01 MON ROLL ATT INDIC
827.00	837.00	10.00	2J 19 MON PITCH REF INDIC
827.00	837.00	10.00	3A 10 MONITOR AIRSPEED INDIC
837.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
837.00	847.00	10.00	2K 14 MON MAP VIDEO
837.00	847.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
837.00	847.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
037.00	047.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
037.00	047.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
037.00	047.00	10.00	2J 01 MON ROLL ATT INDIC
037.00	047.00	10.00	2J 19 MON PITCH REF INDIC
037.00	047.00	10.00	3A 10 MONITOR AIRSPEED INDIC
043.00			160048 ANNUNCIATOR RECALL
043.00	045.28	2.28	7A 28 ACTUATE ANNUN PNL RECALL SW
045.28	045.81	0.53	7A 36 MON ALL ANNUN LTS
047.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
047.00	057.00	10.00	2K 14 MON MAP VIDEO
047.00	057.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
047.00	057.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
047.00	057.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
047.00	057.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
047.00	057.00	10.00	2J 01 MON ROLL ATT INDIC
047.00	057.00	10.00	2J 19 MON PITCH REF INDIC
047.00	057.00	10.00	3A 10 MONITOR AIRSPEED INDIC
055.00			160041 MON VOR/RMI-1
057.00			160042 MON ADF/RMI-1
057.00			160048 MON ADF/RMI-2
057.00	059.28	2.28	SE 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
060.00			168L09 REACH 210 KCAS
060.00			160087 CAPTURE GLIDE SLOPE
064.00			160061 CONTACT TOWER FOR FINAL LANDING CLEARANCE
064.00	065.45	1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
066.40	071.40	5.00	1B 25 ACT PUSH-TO-TALK SW ON CONTROL HANDGRIP
066.40	071.40	5.00	1B 17 COMM VIA VHF-2
070.40	074.40	4.00	1P160038 RADIO COMM-[ATLANTA TOWER, NASA 515 IS BAHRR.
074.40	081.40	7.00	1B 19 MON VHF-2 COMM AUDIO
074.40	078.40	4.00	1P160040 MON RADIO COMM - [NASA 515, NO. 3 FOR SL DC-8 3 MI AHEAD.WIND 110
078.40	081.40	3.00	1P160041 AT NINE.CLEARED TO LAND RW 8L.
081.40	083.10	1.70	1B 29 ACTUATE COMM 2 PUSH-TO-TALK SW
081.40	083.10	1.70	1B 15 COMM VIA VHF-2
081.40	083.10	1.70	1P160037 RADIO COMM - [515, ROGER]
084.00			168L10 CROSS BAHRR
084.00			160011 SET FLAPS TO FLAPS 1
084.00	084.70	0.70	1P 10 MONITOR CALL-OUT
085.00	087.69	2.69	4E 07 SET FLAP CONT LEVER TO FLAPS 1
087.69	089.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
689.82	691.09	1.17	4N 03 MON LE FLAPS-IN- TRANSIT LT ON
691.09	692.26	1.17	4N 04 MON LE FLAPS-IN- TRANSIT LT OFF
692.26	692.96	0.70	1P160058 CALL OUT -[FLAPS 1]
670.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
685.00			16BL11 REACH 190 KCAS
694.00			180017 SET FLAPS TO FLAPS 5
695.00	697.89	2.89	4E 09 SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P160081 CALL OUT -[FLAPS 6]
694.00			180018 FLAP SET PROCEDURE
694.00	694.70	0.70	1P 10 MONITOR CALL-OUT
698.89	699.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
699.71	701.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
697.89	698.86	1.17	4N 03 MON LE FLAPS-IN- TRANSIT LT ON
698.86	700.03	1.17	4N 04 MON LE FLAPS-IN- TRANSIT LT OFF
699.00			630007 ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F 25 MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F 30 MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F 21 MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F 22 MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F 23 MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F 24 MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F 16 MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
702.52	702.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
708.00			16BL12 REACH 170 KCAS
710.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
710.00	720.00	10.00	2K 14 MON MAP VIDEO
710.00	720.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
710.00	720.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
710.00	720.00	10.00	2J 05 MON FLT PATH ANGLE INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
710.00	720.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
710.00	720.00	10.00	2J 01 MON ROLL ATT INDIC
710.00	720.00	10.00	2J 19 MON PITCH REF INDIC
710.00	720.00	10.00	3A 10 MONITOR AIRSPEED INDIC
720.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
720.00	730.00	10.00	2K 14 MON MAP VIDEO
720.00	730.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
720.00	730.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
720.00	730.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
720.00	730.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
720.00	730.00	10.00	2J 01 MON ROLL ATT INDIC
720.00	730.00	10.00	2J 19 MON PITCH REF INDIC
720.00	730.00	10.00	3A 10 MONITOR AIRSPEED INDIC
730.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00	740.00	10.00	2K 14 MON MAP VIDEO
730.00	740.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
730.00	740.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
730.00	740.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
730.00	740.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
730.00	740.00	10.00	2J 01 MON ROLL ATT INDIC
730.00	740.00	10.00	2J 19 MON PITCH REF INDIC
730.00	740.00	10.00	3A 10 MONITOR AIRSPEED INDIC
730.00			00EV21 PILOT EXT VIS SCAN
740.00			180069 SET SPEED BRAKES
744.00			180048 MON ADF/RMI-2
744.00	746.26	2.26	SE 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
746.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
746.00			180113 CROSS REIFF
748.00			180070 SET AUTO BRAKES
748.00	750.82	2.82	4D 43 SET AUTO BRAKE SEL SW TO MED
750.82	750.88	0.06	4D 40 MON AUTO BRAKE INOP LT OFF
755.00			00EV01 C/P EXT VIS SCAN
755.00	760.00	5.00	SA 10 PILOT EXTERNAL VISION SCAN
765.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
765.00	775.00	10.00	2K 14 MON MAP VIDEO
765.00	775.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
765.00	775.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
765.00	775.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
765.00	775.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
765.00	775.00	10.00	2J 01 MON ROLL ATT INDIC

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
765.00	775.00	10.00	2J 19 MON PITCH REF INDIC
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00	785.00	10.00	2K 14 MON MAP VIDEO
775.00	785.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
775.00	785.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
775.00	785.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
775.00	785.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
775.00	785.00	10.00	2J 01 MON ROLL ATT INDIC
775.00	785.00	10.00	2J 19 MON PITCH REF INDIC
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
800.00			180058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P180074 CALL OUT -(RUNWAY IN SITE)
805.00			00EV21 PILOT EXT VIS SCAN
808.00			180018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.89	812.92	2.23	4E 18 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 18 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.88	812.86	1.17	4N 03 MON LE FLAPS-IN- TRANSIT LT ON
812.88	814.03	1.17	4N 04 MON LE FLAPS-IN- TRANSIT LT OFF
808.00			180025 SET FLAPS TO FLAPS 15
809.00	811.48	2.48	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P180062 CALL OUT -(FLAPS 15)
812.00			180042 MON ADF/RMI-1
815.00			180059 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
815.00			180114 CROSS CATIA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			180049 MON RADIO ALTIMETER
815.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			180080 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D 09 MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
845.00			180082 LANDING CHECKLIST

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
845.00	846.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P180076 CALL OUT -(RECALL)
847.60	848.00	0.40	1P180077 CALL OUT -(CHECKED)
848.00	849.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P180078 CALL OUT -(SPEED BRAKES)
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P180080 CALL OUT -(LANDING GEAR)
855.20	856.20	1.00	1P180081 CALL OUT -(DOWN, THREE GREEN)
856.20	857.20	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P180082 CALL OUT -(FLAPS)
858.60	859.70	1.10	1P180083 CALL OUT -(FIFTEEN GREEN LIGHT)
861.10	862.20	1.10	1P180084 CALL OUT -(CHECKLIST COMPLETE)
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
865.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
877.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
877.00	887.00	10.00	2K 14 MON MAP VIDEO
877.00	887.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
877.00	887.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
877.00	887.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
877.00	887.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
877.00	887.00	10.00	2J 01 MON ROLL ATT INDIC
877.00	887.00	10.00	2J 19 MON PITCH REF INDIC
877.00	887.00	10.00	3A 10 MONITOR AIRSPEED INDIC
889.00			030007 ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25 MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30 MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21 MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22 MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23 MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24 MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC



SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
891.84	892.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
891.84	892.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
892.52	892.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
895.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
895.00			180048 MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
900.00			00EV04 C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
923.00			180085 DESCEND THRU -DECISION HEIGHT
923.00	925.58	2.58	3R 12 MON DECISION HGT LT ON FDI
925.58	926.38	0.80	1P180086 CALL OUT -(DECISION HEIGHT)
915.00			00EV21 PILOT EXT VIS SCAN
920.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
925.00			180064 CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
928.00			188L16 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
940.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
940.00	950.00	10.00	2K 14 MON MAP VIDEO
940.00	950.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
940.00	950.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
940.00	950.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
940.00	950.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
940.00	950.00	10.00	2J 01 MON ROLL ATT INDIC
940.00	950.00	10.00	2J 19 MON PITCH REF INDIC
940.00	950.00	10.00	3A 10 MONITOR AIRSPEED INDIC
941.00			188L16 CROSS RW THRESHOLD
950.00			188L17 TOUCHDOWN
950.00			180036 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	2J 18 MON TV VIDEO
950.00	980.00	30.00	2J 40 MON EADI RWY
950.00	980.00	30.00	2J 41 MON EADI DRIFT INDIC
950.00	980.00	30.00	7F 25 MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F 30 MON ENG NO 2 EPR IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
980.00			180036 TOUCHDOWN AND ROLL- OUT. AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	2J 15 MON TV VIDEO
980.00	1010.00	30.00	2J 40 MON EADI RWY
980.00	1010.00	30.00	2J 41 MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F 25 MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F 30 MON ENG NO 2 EPR IND
1010.00			180037 DISENGAGE AGCS
1010.00			00EY23 PILOT EXT VIS SCAN
984.00			180071 HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1B 18 MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P180087 MON RADIO COMM - [NASA S15, EXIT RUN- WAY NEXT INTERSEC- TION. CONTACT GROUND
987.50	990.00	2.50	1P180088 POINT NINER WHEN CLEAR OF RUNWAY, OVER]
990.00	992.50	2.50	1B 14 ACT PUSH-TO-TALK SW ON HANDGRIP
990.00	992.50	2.50	1B 15 COMM VIA VHF-2
990.00	992.50	2.50	1P180089 RADIO COMM -[S15, ROGER. POINT NINER WHEN CLEAR]
993.00	998.08	5.08	1B 01 MON VHF-2L FREQ IND
993.00	996.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
996.88	997.88	1.00	1B 03 SET VHF-2L FREQ - FRACTIONS
998.00	999.45	1.45	1B 05 SET VHF-2 COMM TFR SW TO LEFT
999.50	1003.00	3.50	1B 29 ACTUATE COMM 2 PUSH- TO-TALK SW
999.50	1003.00	3.50	1B 18 COMM VIA VHF-2
999.50	1003.00	3.50	1P180090 RADIO COMM -[ATLANTA GROUND, THIS IS NASA S15. TAXI TO GATE X, OVER]
1004.00	1007.50	3.50	1B 18 MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P180091 MON RADIO COMM - [NASA S15, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST-SOUTH-
1007.50	1008.50	1.00	1P180092 WEST TAXIWAY, OVER]
1008.00	1010.70	1.70	1B 29 ACTUATE COMM 2 PUSH- TO-TALK SW
1008.00	1010.70	1.70	1B 18 COMM VIA VHF-2
1008.00	1010.70	1.70	1P180037 RADIO COMM - [S15, ROGER]

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 \* UNSHIFTED \*  
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 \* MISSION SCENARIO REPORT \*  
 \* MISSION - MD-8 DATA LINK \*  
 \* ILS AP-BASE LN. \*  
 \* CONFIGURATION - 737 ADVCDN FLT DCK \*  
 \* CREWMEMBER - COPILOT \*  
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TIME INTERVAL (SECS) SINCE MISSION START BEGINNING	TIME END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK
0.00			18DL DATA LINK AFD ILS AP
0.00			18DL01 CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTR UCTED NARA 514 TO MONITOR ATL APPROACH ON 128.9 AT LOGEN. VHF-2R HAS BEEN SET.
0.00			18DL90 MONITOR ATL APPROACH ON 128.9/VHF-2R
0.00	1.45	1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
1.50	3.50	2.00	1B 04 ADJ VHF-2 VOLUME
0.00			180080 DROP OUT OF HOR AND VERT PATH TO FPA,TKA,AND CAS AUTO FLT MODES ENTER FPA IN MCP
10.00			090048 FLIGHT INSTRUMENT SCAN -A2
40.00			090048 FLIGHT INSTRUMENT SCAN -A2
70.00			090048 FLIGHT INSTRUMENT SCAN -A2
15.00			180013 SET NAV-1 TO RUNWAY 8L ILS -109.3
15.00	21.00	6.00	8B 06 RETREIVE CHARTS
21.00	26.00	5.00	8B180003 REVIEW CHARTS TO DETERMINE RUNWAY 08 ILS FREQ AND REQ VOR FREQ
26.00	31.08	5.08	5U 01 MON NAV-1 FREQ INDIC
26.00	29.00	3.00	6U 02 SET NAV-1 FREQ - WHOLE NO.8
29.00	31.08	2.08	5U 03 SET NAV-1 FREQ - FRACTIONS
31.50	34.40	2.90	1P180058 CALL OUT -(RUNWAY 8L ILS IS ON NAV 1)
31.50	33.77	2.27	6H 02 MON VOR POINTER NO.1 ON VOR/RMI 2 INDIC
60.00			00EV30 PILOT EXT VIS SCAN
39.00			180039 SET ADF-1 TO CATT -375KC
38.00	41.00	3.00	8D 17 SET ADF NO.1 BFO SW TO OFF
41.00	41.77	0.77	8D 22 MON ADF NO.1 TUNING METER INDIC
41.77	43.75	1.98	8D 01 MONITOR ADF NO 1 FREQ INDIC
43.75	45.73	1.98	8D 02 SELECT ADF NO 1 FREQ INDIC
45.73	47.23	1.50	1P180068 CALL OUT -(CATT ON ADF-1)
49.00			180040 SET ADF-2 TO FLANC -344
49.00	51.09	2.09	5E 17 SEL ADF NO.2 FREQ BAND .19-.40
52.00	53.98	1.98	5E 01 MON ADF NO 2 FREQ. INDIC
52.00	53.98	1.98	5E 02 SELECT ADF NO 2 FREQ

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
52.00	54.26	2.26	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P160066 CALL OUT -(FLANC ON ADF-2)
58.00			160038 SET DECISION HEIGHT ON RADIO ALTIMETER
64.00			030007 ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 25 MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30 MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21 MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22 MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23 MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24 MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
70.00			160005 DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02 MONITOR CALL-OUT
72.00	77.80	5.80	5B 02 RETREIVE CHECKLIST
78.00	83.00	5.00	5B 05 FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	5B 03 READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P160044 CALL OUT-(ANTI-ICE)
87.00	87.80	0.80	1P160045 CALL OUT-(NOT REQD)
88.00	90.00	2.00	5B 03 READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P160046 CALL OUT -(AIR CON- DITIOING AND PRES- SURIZATION)
92.00	94.67	2.67	7D 69 MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D 70 MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E 08 MON LDB ALT CNTR
98.00	98.40	0.40	1P160047 CALL OUT (SET)
100.00			160008 DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	5B 03 READ NEXT ITEM ON CHECKLIST
102.00	102.80	0.80	1P160048 CALL OUT-(START SWITCHES)
108.50	109.00	0.50	1P 06 MONITOR REPORT

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
109.00	111.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P180050 CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G 17 SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P180051 CALL OUT -[ON]
114.50	116.50	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P180052 CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H 02 MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H 05 F.O. CHECK CAPT-8 ALTIMETER BARO SET AND INDICATED ALTI-TUDE
123.40	124.70	1.30	1P180053 CALL OUT-[SET AND CROSSCHECKED]
125.00			180007 DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P180054 CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004 RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	138.00	5.00	8B180001 DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F 26 SET ENG NO 1 EPR BUG
136.32	138.32	2.00	7F 27 MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F 28 SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F 29 MON ENG NO 2 EPR BUG
141.00	148.00	5.00	8B180002 DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A 07 MON V-REF BUG SETTING
146.00	148.57	2.57	3A 05 SET V-REF BUG
146.00	147.90	1.90	1P180055 CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A 12 F.O. CHECK CAPTIS V-REF BUG SETTING
154.00	155.60	1.60	1P180056 CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B 03 READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P180057 CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B 06 STOW CHECKLIST
160.60	162.60	2.00	8B010005 STOW FLIGHT PLANNING REF. DATA MANUAL
165.00			030007 ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F 25 MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 22 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENW N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 16 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	8A 11 PILOT EXTERNAL VISION SCAN
196.00			090051 FLIGHT INSTRUMENT SCAN -A1
195.00			180048 MON ADF/RMI-2
195.00	197.28	2.28	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			18DL81 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PRDQ) AMBER
198.60	200.40	1.80	1X180001 LINE SELECT (ATC UPLINKS PENDING)
200.40	210.40	10.00	1D16XX01 READ -TURN RT HDG 270,DESCND AND MAIN- TAIN 8000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X180041 LINE SELECT (WILCO)
200.00			18DL81 ARM NEW DL MCP ALT
200.00			18BL02 BEGIN TURN TO DOWN- WIND LEG
205.00			18DL82 ENGAGE DATA LINKED HEADING IN MCP
210.00			18BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
219.00			180092 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
221.88	223.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
228.00			18DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
228.00	227.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
227.50	229.50	2.00	1B 04 ADJ VHF-2 VOLUME
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
240.00			00EV09 C/P EXT VIS SCAN
240.00	265.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
260.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00			090048 FLIGHT INSTRUMENT SCAN -A2

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME
310.00		
340.00		
288.00		
288.00	288.44	0.44
288.00	288.44	0.44
288.44	288.88	0.44
288.44	288.88	0.44
288.88	289.32	0.44
288.88	289.32	0.44
289.32	289.76	0.44
289.32	289.76	0.44
289.76	290.20	0.44
289.76	290.20	0.44
290.20	290.64	0.44
290.64	291.08	0.44
290.64	291.08	0.44
291.08	291.52	0.44
291.08	291.52	0.44
291.52	291.96	0.44
291.52	291.96	0.44
295.00		
295.00	340.00	45.00
340.00		
340.00	360.00	20.00
363.00		
363.00	363.44	0.44
363.00	363.44	0.44
363.44	363.88	0.44
363.44	363.88	0.44
363.88	364.32	0.44
363.88	364.32	0.44
364.32	364.76	0.44
364.32	364.76	0.44
364.76	365.20	0.44
364.76	365.20	0.44
365.20	365.64	0.44
365.64	366.08	0.44
365.64	366.08	0.44
366.08	366.52	0.44

EVENT/PROCEDURE TASK		
090048	FLIGHT INSTRUMENT SCAN -A2	
090048	FLIGHT INSTRUMENT SCAN -A2	
030007	ENGINE INSTRUMENT SCAN	
7F	25	MON ENG NO 1 EPR IND
7F	30	MON ENG NO 2 EPR IND
7F	21	MON NO 1 ENG N1 IND
7F	22	MON NO 2 ENG N1 IND
7F	31	MON ENG NO 1 EXH GAS TEMP IND
7F	32	MON ENG NO 2 EXH GAS TEMP IND
7F	23	MON NO 1 ENG N2 IND
7F	24	MON NO 2 ENG N2 IND
7F	33	MON ENG NO 1 FUEL FLOW INDIC
7F	34	MON ENG NO 2 FUEL FLOW INDIC
7F	09	MON NO 1 ENG OIL PRESS INDIC
7F	10	MON NO 1 ENG OIL TEMP INDIC
7F	18	MON NO 2 ENG OIL TEMP INDIC
7F	11	MON NO 1 ENG OIL QTY INDIC
7F	19	MON NO 2 ENG OIL QTY INDIC
7F	12	MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
00EV09	C/P EXT VIS SCAN	
8A	12	PILOT EXTERNAL VISION SCAN
00EV04	C/P EXT VIS SCAN	
8A	10	PILOT EXTERNAL VISION SCAN
030007	ENGINE INSTRUMENT SCAN	
7F	25	MON ENG NO 1 EPR IND
7F	30	MON ENG NO 2 EPR IND
7F	21	MON NO 1 ENG N1 IND
7F	22	MON NO 2 ENG N1 IND
7F	31	MON ENG NO 1 EXH GAS TEMP IND
7F	32	MON ENG NO 2 EXH GAS TEMP IND
7F	23	MON NO 1 ENG N2 IND
7F	24	MON NO 2 ENG N2 IND
7F	33	MON ENG NO 1 FUEL FLOW INDIC
7F	34	MON ENG NO 2 FUEL FLOW INDIC
7F	09	MON NO 1 ENG OIL PRESS INDIC
7F	10	MON NO 1 ENG OIL TEMP INDIC
7F	18	MON NO 2 ENG OIL TEMP INDIC
7F	11	MON NO 1 ENG OIL QTY INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG V:ER AMPLITUDE INDIC
370.00			18BL04 DESCEND THRU 8000.
370.00			18DL94 ALTITUDE STEP DOWN
370.00	371.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
371.60	373.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
373.60	375.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
375.40	379.40	4.00	1D16XX94 READ -DESCEND AND MAINTAIN 5000 FT
379.40	381.20	1.80	1X160041 LINE SELECT [WILCO]
375.00			18DL81 ARM NEW DL MCP ALT
385.00			090048 FLIGHT INSTRUMENT SCAN -A2
415.00			090048 FLIGHT INSTRUMENT SCAN -A2
445.00			090048 FLIGHT INSTRUMENT SCAN -A2
475.00			090048 FLIGHT INSTRUMENT SCAN -A2
505.00			090051 FLIGHT INSTRUMENT SCAN -A1
385.00			00EV08 C/P EXT VIS SCAN
385.00	425.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXN GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC



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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
450.00			16DL02 RECEIVE ATL ETIS TERMINAL INFORMATION
450.00	451.80	1.80	1X160004 LINE SELECT [ETIS REQUESTS]
451.80	453.80	2.00	1D16XX33 READ [ETIS REQUEST FOR KATL]
453.80	455.80	1.80	1X160046 LINE SELECT [FULL ETIS REPORT]
455.80	460.20	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D16XX08 MON VISUAL ALERT DSP [MODE-8 UPLINK PNDG] INDENTED BLUE
462.20	464.00	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
464.00	474.00	10.00	1D16XX31 READ-ETIS REPORT FOR ATL AT XXXXZ. SKY 25 SCT/40 SKN. VSB 16. WIND 110/10/G17.
474.00	479.00	5.00	1D16XX32 TEMP 59. ALT 2984. APR RW08L AND RW09R SIMULT PARALLEL ILS
479.00	480.80	1.80	1X160047 LINE SELECT [PRINT MESSAGE]
480.00			16BL05 CROSS FT NDB
480.00			160003 SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043 CALL OUT-DESCENT AND APPROACH CHECK- LIST]
484.00			140032 ALTIMETER BARO SET PROC.
484.00	486.85	2.65	3H 04 MONITOR ALTIMETER BARO SETTING INDIC
484.00	488.85	2.65	3H 03 SET ALTIMETER BARO SETTING CONTROL
513.00			030007 ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25 MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30 MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21 MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22 MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31 MON ENG NO 1 EXN GAS TEMP IND
513.88	514.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
514.32	514.76	0.44	7F 23 MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24 MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
515.20	515.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
516.52	516.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041 MON VOR/RMI-1
520.00			16DL95 VECTOR FOR BASE LEG

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
520.00	521.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
521.60	523.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
523.60	525.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
525.40	528.40	3.00	1D16XX95 READ -TURN LEFT HEADING 180
528.40	530.20	1.80	1X160041 LINE SELECT [WILCO]
523.00			16DL82 ENGAGE DATA LINKED HEADING IN MCP
523.00			16BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140045 CALL OUT -[1000 FEET TO LEVEL OFF]
550.00			00EY03 C/P EXT VIS SCAN
550.00	555.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090051 FLIGHT INSTRUMENT SCAN -A1
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			16DL96 VECTOR TO FINAL APPR
570.00	571.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
573.60	575.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
575.40	584.40	9.00	1D16XX96 READ -12 NM FROM OM TURN LT HDG 110. MAIN TAIN 5000 UNTIL XING BAHRR.
584.40	591.40	7.00	1D16ZZ97 CLEARED FOR ILS SL APPR. MONITOR TOWER ON 119.5 AT BAHRR
591.40	593.20	1.80	1X160041 LINE SELECT [WILCO]
575.00			16DL82 ENGAGE DATA LINKED HEADING IN MCP
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			160083 ARM LAND MODE
597.00			160034 TUNE ATLANTA TOWER -119.5
597.00	601.88	4.88	1B 07 MON VHF-2R FREQ IND
597.00	599.88	2.88	1B 08 SET VHF-2R FREQ - WHOLE NO.8
599.88	601.88	1.98	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			160070 FLIGHT INSTRUMENT SCAN -A1, PILOT
607.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
607.00	617.00	10.00	2K 14 MON MAP VIDEO
607.00	617.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
607.00	617.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
607.00	617.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
607.00	617.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
607.00	617.00	10.00	2J 01 MON ROLL ATT INDIC
607.00	617.00	10.00	2J 19 MON PITCH REF INDIC
607.00	617.00	10.00	3A 10 MONITOR AIRSPEED INDIC
610.00			180084 CAPTURE AN ALT IN ALT SEL MODE
610.00			18BL08 LEVEL OFF AT 8000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
617.00	627.00	10.00	2K 14 MON MAP VIDEO
617.00	627.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
617.00	627.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
617.00	627.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
617.00	627.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
617.00	627.00	10.00	2J 01 MON ROLL ATT INDIC
617.00	627.00	10.00	2J 19 MON PITCH REF INDIC
617.00	627.00	10.00	3A 10 MONITOR AIRSPEED INDIC
613.00			180085 ENTER NEW SPEED IN CAS WINDOW
623.00			180086 CAPTURE LOCALIZER
623.00	625.19	2.19	2J 13 MON ILS BOX INDIC
625.00	626.30	1.30	1P180067 CALL OUT -[LOCALIZER ALIVE]
626.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
627.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
627.00	637.00	10.00	2K 14 MON MAP VIDEO
627.00	637.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
627.00	637.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
627.00	637.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
627.00	637.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
627.00	637.00	10.00	2J 01 MON ROLL ATT INDIC
627.00	637.00	10.00	2J 19 MON PITCH REF INDIC
627.00	637.00	10.00	3A 10 MONITOR AIRSPEED INDIC
637.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00	647.00	10.00	2K 14 MON MAP VIDEO
637.00	647.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
637.00	647.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
637.00	647.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
637.00	647.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
637.00	647.00	10.00	2J 01 MON ROLL ATT INDIC
637.00	647.00	10.00	2J 19 MON PITCH REF INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
037.00	047.00	10.00	3A 10 MONITOR AIRSPEED INDIC
043.00			180045 ANNUNCIATOR RECALL
043.00	045.28	2.28	7A 28 ACTUATE ANNUN PNL RECALL SW
045.28	045.81	0.53	7A 36 MON ALL ANNUN LTS
047.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
047.00	057.00	10.00	2K 14 MON MAP VIDEO
047.00	057.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
047.00	057.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
047.00	057.00	10.00	2J 08 MON FLT PATH ANGLE INDIC
047.00	057.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
047.00	057.00	10.00	2J 01 MON ROLL ATT INDIC
047.00	057.00	10.00	2J 19 MON PITCH REF INDIC
047.00	057.00	10.00	3A 10 MONITOR AIRSPEED INDIC
055.00			180041 MON VOR/RMI-1
057.00			180042 MON ADF/RMI-1
057.00			180048 MON ADF/RMI-2
057.00	059.26	2.26	5E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
060.00			18009 REACH 210 KCAS
060.00			180087 CAPTURE GLIDE SLOPE
064.00			180080 MONITOR ATL TOWER ON 119.5/VHF-2R
064.00	065.45	1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
065.50	067.50	2.00	1B 04 ADJ VHF-2 VOLUME
070.00			180081 LANDING CLEARANCE
070.00	071.80	1.80	1D18XX01 MON INFORMATION MANAGEMENT ATTENTION
071.80	073.80	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
073.80	075.40	1.60	1X180001 LINE SELECT [ATC UPLINKS PENDING]
075.40	085.40	10.00	1D18XX40 READ -NO.3 FOR 8L. DC-9 3 NM AHEAD WIND 110 AT 9. CLEARED TO LAND RW 8L.
085.40	087.20	1.80	1X180041 LINE SELECT [WILCO]
084.00			180010 CROSS BARR
084.00			180011 SET FLAPS TO FLAPS 1
084.00	084.70	0.70	1P 10 MONITOR CALL-OUT
085.00	087.89	2.89	4E 07 SET FLAP CONT LEVER TO FLAPS 1
087.89	089.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
089.92	091.09	1.17	4N 03 MON LE FLAPS-IN- TRANSIT LT ON
091.09	092.26	1.17	4N 04 MON LE FLAPS-IN- TRANSIT LT OFF
092.26	092.98	0.70	1P180058 CALL OUT -[FLAPS 1]
070.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
085.00			180011 REACH 190 KCAS

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME
694.00		
695.00	697.69	2.69
699.00	699.70	0.70
694.00		
694.00	694.70	0.70
696.69	698.92	2.23
698.71	701.21	2.50
697.69	698.86	1.17
698.86	700.03	1.17
699.00		
699.00	699.44	0.44
699.00	699.44	0.44
699.44	699.88	0.44
699.44	699.88	0.44
699.88	700.32	0.44
699.88	700.32	0.44
700.32	700.76	0.44
700.32	700.76	0.44
700.76	701.20	0.44
700.76	701.20	0.44
701.20	701.64	0.44
701.64	702.08	0.44
701.64	702.08	0.44
702.08	702.52	0.44
702.08	702.52	0.44
702.52	702.96	0.44
702.52	702.96	0.44
700.00		
706.00		
710.00		
710.00	720.00	10.00
710.00	720.00	10.00
710.00	720.00	10.00
710.00	720.00	10.00
710.00	720.00	10.00
710.00	720.00	10.00
710.00	720.00	10.00
710.00	720.00	10.00
720.00		

EVENT/PROCEDURE TASK		
160017	SET FLAPS TO FLAPS 3	
4E	09 SET FLAP CONT LEVER TO FLAPS 3	
1P160061	CALL OUT -[FLAPS 3]	
160018	FLAP SET PROCEDURE	
1P	10 MONITOR CALL-OUT	
4E	15 MONITOR FLAP POSITION INDICATOR	
4E	16 CHECK FLAP LEVER AND POSITION INDIC AGREE	
4N	03 MON LE FLAPS-IN- TRANSIT LT ON	
4N	04 MON LE FLAPS-IN- TRANSIT LT OFF	
030007	ENGINE INSTRUMENT SCAN	
7F	25 MON ENG NO 1 EPR IND	
7F	30 MON ENG NO 2 EPR IND	
7F	21 MON NO 1 ENG N1 IND	
7F	22 MON NO 2 ENG N1 IND	
7F	31 MON ENG NO 1 EXH GAS TEMP IND	
7F	32 MON ENG NO 2 EXH GAS TEMP IND	
7F	23 MON NO 1 ENG N2 IND	
7F	24 MON NO 2 ENG N2 IND	
7F	33 MON ENG NO 1 FUEL FLOW INDIC	
7F	34 MON ENG NO 2 FUEL FLOW INDIC	
7F	09 MON NO 1 ENG OIL PRESS INDIC	
7F	10 MON NO 1 ENG OIL TEMP INDIC	
7F	18 MON NO 2 ENG OIL TEMP INDIC	
7F	11 MON NO 1 ENG OIL QTY INDIC	
7F	19 MON NO 2 ENG OIL QTY INDIC	
7F	12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC	
7F	20 MON NO 2 ENG VIBR AMPLITUDE INDIC	
160071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
160112	REACH 170 KCAS	
160073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
2K	14 MON MAP VIDEO	
2K	46 MON STRAIGHT TREND VECTOR SYMBOL	
2K	33 MON CURVED TREND VECTOR SYMBOLS	
2J	05 MON FLT PATH ANGLE INDIC	
2J	04 MON FLT PATH ACCEL INDIC	
2J	01 MON ROLL ATT INDIC	
2J	19 MON PITCH REF INDIC	
3A	10 MONITOR AIRSPEED INDIC	
160073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
720.00	730.00	10.00	2K 14 MON MAP VIDEO
720.00	730.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
720.00	730.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
720.00	730.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
720.00	730.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
720.00	730.00	10.00	2J 01 MON ROLL ATT INDIC
720.00	730.00	10.00	2J 19 MON PITCH REF INDIC
720.00	730.00	10.00	3A 10 MONITOR AIRSPEED INDIC
730.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00	740.00	10.00	2K 14 MON MAP VIDEO
730.00	740.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
730.00	740.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
730.00	740.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
730.00	740.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
730.00	740.00	10.00	2J 01 MON ROLL ATT INDIC
730.00	740.00	10.00	2J 19 MON PITCH REF INDIC
730.00	740.00	10.00	3A 10 MONITOR AIRSPEED INDIC
730.00			00EV21 PILOT EXT VIS SCAN
740.00			180089 SET SPEED BRAKES
744.00			180048 MON ADF/RMI-2
744.00	746.26	2.26	6E 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00			180113 CROSS REIFF
748.00			180070 SET AUTO BRAKES
748.00	750.82	2.82	4D 43 SET AUTO BRAKE SEL SW TO MED
750.82	750.88	0.06	4D 40 MON AUTO BRAKE INOP LT OFF
755.00			00EV01 C/P EXT VIS SCAN
755.00	760.00	5.00	6A 10 PILOT EXTERNAL VISION SCAN
765.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
765.00	775.00	10.00	2K 14 MON MAP VIDEO
765.00	775.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
765.00	775.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
765.00	775.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
765.00	775.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
765.00	775.00	10.00	2J 01 MON ROLL ATT INDIC
765.00	775.00	10.00	2J 19 MON PITCH REF INDIC
765.00	775.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00	785.00	10.00	2K 14 MON MAP VIDEO
775.00	785.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
775.00	785.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
775.00	785.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
775.00	785.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
775.00	785.00	10.00	2J 01 MON ROLL ATT INDIC
775.00	785.00	10.00	2J 19 MON PITCH REF INDIC
775.00	785.00	10.00	3A 10 MONITOR AIRSPEED INDIC
775.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
800.00			180058 REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A 01 VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P180074 CALL OUT -(RUNWAY IN SITE)
805.00			08EV21 PILOT EXT VIS SCAN
808.00			180018 FLAP SET PROCEDURE
808.00	808.70	0.70	1P 10 MONITOR CALL-OUT
810.88	812.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E 16 CHECK FLAP LEVER AND POSITION INDIC AGREE
811.88	812.88	1.17	4N 03 MON LE FLAPS-IN- TRANSIT LT ON
812.88	814.03	1.17	4N 04 MON LE FLAPS-IN- TRANSIT LT OFF
808.00			160025 SET FLAPS TO FLAP6 15
809.00	811.48	2.48	4E 11 SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P180082 CALL OUT -(FLAPS 15)
812.00			180042 MON ADF/RMI-1
815.00			180059 CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11 MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P 13 MONITOR CALL-OUT
815.00			180114 CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			180049 MON RADIO ALTIMETER
815.00	817.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
820.00			180090 EXTEND LANDING GEAR
820.00	823.27	3.27	4D 03 SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D 05 MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D 09 MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
845.00			180082 LANDING CHECKLIST
845.00	846.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.80	0.80	1P180076 CALL OUT -(RECALL)
847.80	848.00	0.40	1P180077 CALL OUT -(CHECKED)
848.00	849.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
050.00	050.70	0.70	1P100078 CALL OUT -[SPEED BRAKES]
051.00	052.30	1.30	1P 02 MONITOR CALL-OUT
052.50	053.50	1.00	08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
054.50	055.20	0.70	1P100080 CALL OUT -[LANDING GEAR]
055.20	056.20	1.00	1P100081 CALL OUT -[DOWN, THREE GREEN]
056.20	057.20	1.00	08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
058.20	058.60	0.40	1P100082 CALL OUT -[FLAPS]
058.60	059.70	1.10	1P100083 CALL OUT -[FIFTEEN GREEN LIGHT]
061.10	062.20	1.10	1P100084 CALL OUT -[CHECKLIST COMPLETE]
061.10	062.20	1.10	1P 12 MONITOR CALL-OUT
060.00			00EV21 PILOT EXT VIS SCAN
065.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
065.00			00EV02 C/P EXT VIS SCAN
065.00	076.00	10.00	0A 10 PILOT EXTERNAL VISION SCAN
077.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
077.00	087.00	10.00	2K 14 MON MAP VIDEO
077.00	087.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
077.00	087.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
077.00	087.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
077.00	087.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
077.00	087.00	10.00	2J 01 MON ROLL ATT INDIC
077.00	087.00	10.00	2J 19 MON PITCH REF INDIC
077.00	087.00	10.00	3A 10 MONITOR AIRSPEED INDIC
089.00			030007 ENGINE INSTRUMENT SCAN
089.00	089.44	0.44	7F 25 MON ENG NO 1 EPR IND
089.00	089.44	0.44	7F 30 MON ENG NO 2 EPR IND
089.44	089.88	0.44	7F 21 MON NO 1 ENG N1 IND
089.44	089.88	0.44	7F 22 MON NO 2 ENG N1 IND
089.88	090.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
089.88	090.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
090.32	090.76	0.44	7F 23 MON NO 1 ENG N2 IND
090.32	090.76	0.44	7F 24 MON NO 2 ENG N2 IND
090.76	091.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
090.76	091.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
091.20	091.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
091.64	092.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
091.64	092.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
092.08	092.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
092.08	092.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC



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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
892.52	892.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
895.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
895.00			180049 MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01 MON RADIO ALT ALTITUDE INDIC
900.00			00EV04 C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
923.00			180065 DESCEND THRU -DECISION HEIGHT
923.00	925.58	2.58	3R 12 MON DECISION HGT LT ON FDI
925.58	926.38	0.80	1P180086 CALL OUT -(DECISION HEIGHT)
918.00			00EV21 PILOT EXT VIS SCAN
920.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
925.00			180084 CROSS RWY 08 MIDDLE MARKER
926.00	926.81	1.81	3V 13 MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
928.00			188L15 CROSS MIDDLE MARKER
930.00			00EV02 C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
940.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
940.00	950.00	10.00	2K 14 MON MAP VIDEO
940.00	950.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
940.00	950.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
940.00	950.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
940.00	950.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
940.00	950.00	10.00	2J 01 MON ROLL ATT INDIC
940.00	950.00	10.00	2J 19 MON PITCH REF INDIC
940.00	950.00	10.00	3A 10 MONITOR AIRSPEED INDIC
941.00			188L16 CROSS RW THRESHOLD
950.00			188L17 TOUCHDOWN
950.00			180038 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	960.00	30.00	2J 15 MON TV VIDEO
950.00	960.00	30.00	2J 40 MON EADI RWY
950.00	960.00	30.00	2J 41 MON EADI DRIFT INDIC
950.00	960.00	30.00	7F 25 MON ENG NO 1 EPR IND
950.00	960.00	30.00	7F 30 MON ENG NO 2 EPR IND
960.00			180036 TOUCHDOWN AND ROLL- OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00	30.00	2J 15 MON TV VIDEO
980.00	1010.00	30.00	2J 40 MON EADI RWY
980.00	1010.00	30.00	2J 41 MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F 25 MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F 30 MON ENG NO 2 EPR IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
1010.00			180037 DISENGAGE AGCS
1010.00			00EV23 PILOT EXT VIS SCAN
984.00			18DL71 HANDOFF TO GROUND
984.00	985.60	1.60	1D18XX01 MON INFORMATION MANAGEMENT ATENSON
985.60	987.60	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
987.60	989.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
989.40	997.40	8.00	1D18XX87 READ -EXIT RUNWAY NEXT INTERSECTION. MONITOR GROUND 121.9 WHEN CLEAR OF RUNWAY
997.40	999.20	1.80	1X180041 LINE SELECT [WILCO]
1000.00			18DL72 TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L
1000.00	1004.88	4.88	1B 01 MON VHF-2L-FREQ IND
1000.00	1002.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.S
1002.90	1004.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
1004.90	1006.39	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
1006.40	1008.40	2.00	1B 04 ADJ VHF-2 VOLUME
1008.00			18DL73 TAXI CLEARANCE FROM
1008.00	1010.60	1.60	1D18XX01 MON INFORMATION MANAGEMENT ATENSON
1010.60	1012.60	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
1012.60	1014.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
1014.40	1019.40	5.00	1D18XX88 READ -TAXI TO RAMP VIA NE/SW TAXIWAY.
1019.40	1021.20	1.80	1X180041 LINE SELECT [WILCO]

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## **B.5 ILS APPROACH WITH WEATHER DEVIATION—CONVENTIONAL FLIGHT DECK**

### **Flying Pilot**

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
130.00			000019 FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02 MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10 MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			030007 ENGINE INSTRUMENT SCAN
150.00			00EY05 C/P EXT VIS SCAN
195.00			160048 MON ADF/RMI-2
195.00			16XB01 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDANC
195.00	207.00	12.00	1P18XX91 N 515, TURN RT HDG270 DESCEND AND MAINTAIN 8000 FT. CONTACT ATL APPR ON 127.25.
220.00	232.00	12.00	1P18AA91 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 8000 FT CONTACT ATL 127.25
240.00			140007 HEADING CHANGE PROC.
240.00	250.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00	250.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
240.00	250.00	10.00	3L 02 MON VERTICAL SPEED INDIC
240.00	244.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
245.00	255.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03 DESCEND THRU 11000.
200.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BARR AT 5000 FT.
200.00	202.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
200.00	205.00	5.00	4A 84 MANUALLY CONTROL A/C
240.00			160092 TUNE ATL APPROACH ON 127.25
240.00			160093 CONTACT ATL APPROACH ON 127.25
251.90	255.90	4.00	1P18YY90 NASA 515, ATL APPR. ROGER.

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
210.00			090017 FLIGHT INSTRUMENT SCAN - C
210.00	240.00	30.00	3R 56 MON PITCH ATTITUDE INDIC ON FDI
210.00	240.00	30.00	3L 02 MON VERTICAL SPEED INDIC
210.00	240.00	30.00	3A 10 MONITOR AIRSPEED INDIC
210.00	240.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDB ON CI
255.00			00EY03 C/P EXT VIS SCAN
270.00			00EY03 C/P EXT VIS SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
250.00	370.00	120.00	3R 57 MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00	120.00	3L 03 MON VERTICAL SPEED INDIC
260.00	370.00	120.00	3A 11 MONITOR AIRSPEED INDIC
250.00	370.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
288.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EY09 C/P EXT VIS SCAN
330.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 5000 FT.
330.00	332.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
330.00	335.00	5.00	4A 84 MANUALLY CONTROL A/C
340.00			00EY04 C/P EXT VIS SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			16BL04 DESCEND THRU 8600.
370.00			16XB94 ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
374.00	381.00	7.00	1P16BB94 NABA 515, TURN LEFT HEADING 240, DESCEND AND MAINTAIN 5000 FT
370.00			090017 FLIGHT INSTRUMENT SCAN - C
370.00	400.00	30.00	3R 56 MON PITCH ATTITUDE INDIC ON FDI
370.00	400.00	30.00	3L 02 MON VERTICAL SPEED INDIC
370.00	400.00	30.00	3A 10 MONITOR AIRSPEED INDIC
370.00	400.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDB ON CI
380.00			00EY06 C/P EXT VIS SCAN
400.00			140007 HEADING CHANGE PROC.
400.00	410.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDB ON CI
400.00	410.00	10.00	4A 28 ACT FLY CONTROL TO CHANGE HDB
400.00	410.00	10.00	3L 02 MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
400.00	404.92	4.92	38 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
405.00	415.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
415.00			00EY21 PILOT EXT VIS SCAN
415.00	420.00	5.00	8A 10 PILOT EXTERNAL

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
128.00			180007 DESCENT AND APPROACH CHECKLIST - 3
128.00	129.80	1.80	1P 02 MONITOR CALL-OUT
146.00	147.80	1.80	1P 14 MONITOR CALL-OUT
148.00	150.57	2.57	3A 07 MON V-REF BUG SETTING
148.00	150.57	2.57	3A 08 SET V-REF BUG
151.00	154.00	3.00	3A 13 CAPT CHECK F.O. 48 V-REF BUG SETTING
154.00	155.80	1.80	1P 08 MONITOR REPORT
157.80	159.80	1.90	1P 02 MONITOR CALL-OUT
130.00			090018 FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 88 MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02 MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10 MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
195.00			030007 ENGINE INSTRUMENT SCAN
172.00			00EV03 C/P EXT VIS SCAN
195.00			180048 MON ADF/RMI-2
195.00			18XL91 VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	198.80	1.80	1D18XX01 MON INFORMATION MANAGEMENT ATTENTION
198.80	198.80	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
200.40	210.40	10.00	1D18AA91 MONITOR UPLINK CALL- OUT FROM COPILOT
228.00	227.60	1.80	1D18XX01 MON INFORMATION MANAGEMENT ATTENTION
227.60	229.60	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
231.40	241.40	10.00	1D18AL91 MONITOR COPILOT
240.00			140007 HEADING CHANGE PROC.
240.00	250.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDS ON CI
240.00	250.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
240.00	250.00	10.00	3L 02 MON VERTICAL SPEED INDIC
240.00	244.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
248.00	255.00	10.00	3R 88 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
240.00			18XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			18BL03 DESCEND THRU 11000.
200.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 5000 FT.
200.00	202.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
200.00	203.00	5.00	4A 84 MANUALLY CONTROL A/C

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
240.00			160092 TUNE ATL APPROACH ON 127.25
245.00			16DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
210.00			090017 FLIGHT INSTRUMENT SCAN - C
210.00	240.00	30.00	3R 56 MON PITCH ATTITUDE INDIC ON FDI
210.00	240.00	30.00	3L 02 MON VERTICAL SPEED INDIC
210.00	240.00	30.00	3A 10 MONITOR AIRSPEED INDIC
210.00	240.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
255.00			00EV03 C/P EXT VIS SCAN
270.00			00EV03 C/P EXT VIS SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
250.00	370.00	120.00	3R 57 MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00	120.00	3L 03 MON VERTICAL SPEED INDIC
250.00	370.00	120.00	3A 11 MONITOR AIRSPEED INDIC
250.00	370.00	120.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
289.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EV09 C/P EXT VIS SCAN
330.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRA AT 5000 FT.
330.00	332.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
330.00	335.00	5.00	4A 84 MANUALLY CONTROL A/C
340.00			00EV04 C/P EXT VIS SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			18BL04 DESCEND THRU 8000.
370.00			16XL94 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
379.00	380.80	1.80	1D18XX01 MON INFORMATION MANAGEMENT ATTENSON
380.80	382.80	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
384.40	388.40	8.00	1D16AL94 MON COPILOT - TURN LEFT HEADING 240. DESCEND AND MAIN- TAIN 5000 MSL.
370.00			090017 FLIGHT INSTRUMENT SCAN - C
370.00	400.00	30.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
370.00	400.00	30.00	3L 02 MON VERTICAL SPEED INDIC
370.00	400.00	30.00	3A 10 MONITOR AIRSPEED INDIC
370.00	400.00	30.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
380.00			00EV08 C/P EXT VIS SCAN
400.00			140007 HEADING CHANGE PROC.



SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
400.00	410.00	10.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
400.00	410.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
400.00	410.00	10.00	3L 02 MON VERTICAL SPEED INDIC
400.00	404.92	4.92	38 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
405.00	415.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
415.00			00EV21 PILOT EXT VIS SCAN
415.00	420.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
425.00			090017 FLIGHT INSTRUMENT SCAN - C
425.00	455.00	30.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
425.00	455.00	30.00	3L 02 MON VERTICAL SPEED INDIC
425.00	455.00	30.00	3A 10 MONITOR AIRSPEED INDIC
425.00	455.00	30.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
450.00			090017 FLIGHT INSTRUMENT SCAN - C
450.00	490.00	30.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
450.00	490.00	30.00	3L 02 MON VERTICAL SPEED INDIC
450.00	490.00	30.00	3A 10 MONITOR AIRSPEED INDIC
450.00	490.00	30.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
430.00			090007 ENGINE INSTRUMENT

## **B.6 ILS APPROACH WITH WEATHER DEVIATION—CONVENTIONAL FLIGHT DECK**

### **Nonflying Pilot**

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
98.00	188.44	0.44	7F 25 MON ENG EPR IND
98.00	188.44	0.44	7F 30 MON ENG NL 4 EPR IND
188.44	188.88	0.44	7F 21 MON NO 1 ENG N1 IND
188.44	188.88	0.44	7F 22 MON NO 2 ENG N1 IND
188.88	188.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
188.88	188.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
188.32	188.76	0.44	7F 23 MON NO 1 ENG N2 IND
188.32	188.76	0.44	7F 24 MON NO 2 ENG N2 IND
188.76	187.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
188.76	187.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
187.20	187.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
187.64	188.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
187.64	188.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
188.08	188.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
188.08	188.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
188.52	188.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
188.52	188.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	8A 11 PILOT EXTERNAL VISION SCAN
195.00			100048 MON ADF/RMI-2
195.00	197.26	2.26	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			18XB01 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDANC
195.00	207.00	12.00	1P18XX01 N 515, TURN RT HDG 270 DESCND AND MAINTAIN 6000 FT. CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
214.00	217.00	3.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
207.00	217.00	10.00	1P18XY01 APPROACH. 515 HAS STRONG WX RADAR ECHOES. REQUEST HDG 300. WILL ADVISE CLR.
220.00	232.00	12.00	1P18AA01 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
232.00	239.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
232.00	239.00	7.00	1P18BB01 515, ROGER. HDG 300, MAINTAIN 6000, APPR ON 127.25
240.00			140007 HEADING CHANGE PROC.
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			10BL03 DESCEND THRU 11000.
200.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRR AT 5000 FT.
240.00			100092 TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	1B 01 MON VHF-2L FREQ IND
240.00	242.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO. 8

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
242.88	244.88	1.88	1B 03 SET VHF-2L FREQ - FRACTIONS
248.00			180083 CONTACT ATL APPROACH ON 127.25
248.00	247.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
248.40	251.90	3.50	1A 10 ACT PUSH-TO-TALK SW
248.40	251.90	3.50	1P18XX93 ATL APPR,NASA 515 DESCENDING TO 6000.
251.90	255.90	4.00	1P18YY90 NASA 515,ATL APPR. ROGER.
210.00			090017 FLIGHT INSTRUMENT SCAN - C
255.00			00EV03 C/P EXT VIS SCAN
255.00	270.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00			00EV03 C/P EXT VIS SCAN
270.00	285.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
280.00	-		090039 FLIGHT INSTRUMENT SCAN - F
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
340.00			00EV04 C/P EXT VIS SCAN
340.00	360.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
363.00			030007 ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F 25 MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F 30 MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F 21 MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F 22 MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23 MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F 24 MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			108L04 DESCEND THRU 8000.
370.00			10XB94 ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	373.00	3.00	1P18AA94 APPROACH, 515 IS CLEAR OF WEATHER
370.00	373.00	3.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
374.00	381.00	7.00	1P18BB94 NASA 515, TURN LEFT HEADING 240, DESCEND AND MAINTAIN 5000 FT
381.00	384.00	3.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
384.00	385.70	1.70	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
381.00	386.00	5.00	1P18CC94 515, ROGER, TURN LT HDB 240, MAINTN 5000.
370.00			080017 FLIGHT INSTRUMENT SCAN - C
390.00			00EV08 C/P EXT VIS SCAN
390.00	430.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
400.00			140007 HEADING CHANGE PROC.
415.00			00EV21 PILOT EXT VIS SCAN
425.00			080017 FLIGHT INSTRUMENT SCAN - C
460.00			080017 FLIGHT INSTRUMENT SCAN - C
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F 23 MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F 24 MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
433.52	433.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EY03 C/P EXT VIS SCAN
440.00	455.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
05.00			030007 ENGINE INSTRUM SCAN
105.00	105.44	0.44	7F 26 MON ENG NO 1 EPR IND
105.00	105.44	0.44	7F 30 MON ENG NO 2 EPR IND
105.44	105.88	0.44	7F 21 MON NO 1 ENG N1 IND
105.44	105.88	0.44	7F 22 MON NO 2 ENG N1 IND
105.88	106.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
105.88	106.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
106.32	106.76	0.44	7F 23 MON NO 1 ENG N2 IND
106.32	106.76	0.44	7F 24 MON NO 2 ENG N2 IND
106.76	107.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
106.76	107.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
107.20	107.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
107.64	108.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
107.64	108.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
108.08	108.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
108.08	108.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
108.52	108.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
108.52	108.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
172.00			00EY03 C/P EXT VIS SCAN
172.00	187.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
195.00			180048 MON ADF/RMI-2
195.00	197.26	2.26	SE 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			18XL01 VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.60	1.60	1D18XX01 MON INFORMATION MANAGEMENT ATTENSON
196.60	198.60	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNOG] AMBER
198.60	200.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
200.40	210.40	10.00	1D16XX01 READ -TURN RT HDG 270, DESCND AND MAIN- TAIN 8000 FT, MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X180030 LINE SELECT [UNABLE]
212.20	214.00	1.80	1X180024 LINE SELECT [STRONG WX RADAR ECHOES]
214.00	215.80	1.80	1X180014 LINE SELECT [HEADING REQUEST]
215.80	217.00	1.20	1X180033 PRESS KEY [3]
217.00	218.20	1.20	1X180040 PRESS KEY [0]
218.20	219.40	1.20	1X180040 PRESS KEY [0]
219.40	221.20	1.80	1X180028 LINE SELECT [REQ TEM HDG XXX-WILL ADVISE]
226.00	227.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATTENSON
227.80	229.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
229.60	231.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
231.40	241.40	10.00	1D16XL01 READ -TURN RT HDG 300, DESCEND AND MAINTAIN 6000 MSL MONITOR APPR 127.25
241.40	243.20	1.80	1X180030 LINE SELECT [UNABLE]
240.00			140007 HEADING CHANGE PROC.
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03 DESCEND THRU 11000.
200.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRR AT 5000 FT.
240.00			160002 TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	1B 01 MON VHF-2L FREQ IND
240.00	242.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
242.88	244.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
246.00			16DL03 MONITOR ATL APPROACH ON 127.25/VHF-2L
246.00	247.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
247.50	249.50	2.00	1B 04 ADJ VHF-2 VOLUME
210.00			090017 FLIGHT INSTRUMENT SCAN - C
255.00			00EY03 C/P EXT VIS SCAN
255.00	270.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00			00EY03 C/P EXT VIS SCAN
270.00	285.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND



SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXN GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRR AT 8000 FT.
340.00			00EV04 C/P EXT VIS SCAN
370.00			18XL94 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	371.80	1.80	1X180002 LINE SELECT [REQUEST FOR CLEARANCE]
371.80	373.60	1.80	1X180020 LINE SELECT [RESUME ON-COURSE]
378.00	380.60	1.60	1D18XX01 MON INFORMATION MANAGEMENT ATTENTION
380.60	382.80	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
382.80	384.40	1.60	1X180001 LINE SELECT [ATC UPLINKS PENDING]
384.40	390.40	6.00	1D18XL94 READ - TURN LEFT HEADING 240. DESCEND & MAINTAIN 8000 MSL.
390.40	392.20	1.80	1X180030 LINE SELECT [UNABLE]
370.00			090017 FLIGHT INSTRUMENT SCAN - C
390.00			00EV08 C/P EXT VIS SCAN
390.00	430.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
400.00			140007 HEADING CHANGE PROC.
415.00			00EV21 PILOT EXT VIS SCAN
425.00			090017 FLIGHT INSTRUMENT SCAN - C
460.00			090017 FLIGHT INSTRUMENT SCAN - C
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND

SINCE MISSION START  
BEGINNING END

ACTIVITY  
TIME

EVENT/PROCEDURE  
TASK

430.00 430.44  
430.44 430.88  
430.44 430.88  
430.88 431.32  
430.88 431.32  
431.32 431.76  
431.32 431.76  
431.76 432.20  
431.76 432.20  
432.20 432.64  
432.64 433.08  
432.64 433.08  
433.08 433.52  
433.08 433.52  
433.52 433.96  
433.52 433.96

0.44  
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0.44  
0.44  
0.44

7F 30 MON ENG NO 2 EPR IND  
7F 21 MON NO 1 ENG N1 IND  
7F 22 MON NO 2 ENG N1 IND  
7F 31 MON ENG NO 1 EXH GAS  
TEMP IND  
7F 32 MON ENG NO 2 EXH GAS  
TEMP IND  
7F 23 MON NO 1 ENG N2 IND  
7F 24 MON NO 2 ENG N2 IND  
7F 33 MON ENG NO 1 FUEL  
FLOW INDIC  
7F 34 MON ENG NO 2 FUEL  
FLOW INDIC  
7F 09 MON NO 1 ENG OIL  
PRESS INDIC  
7F 10 MON NO 1 ENG OIL  
TEMP INDIC  
7F 18 MON NO 2 ENG OIL  
TEMP INDIC  
7F 11 MON NO 1 ENG OIL QTY  
INDIC  
7F 19 MON NO 2 ENG OIL  
QTY INDIC  
7F 12 MON NO 1 ENG VIBRA-  
TION AMPLITUDE INDIC  
7F 20 MON NO 2 ENG VIBR

## **B.7 ILS APPROACH WITH WEATHER DEVIATION—ADVANCED FLIGHT DECK**

**Flying Pilot**

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
185.00			090051 FLIGHT INSTRUMENT SCAN -A1
186.00	195.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
186.00	195.00	10.00	3L 02 MON VERTICAL SPEED INDIC
186.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
186.00	195.00	10.00	2K 14 MON MAP VIDEO
186.00	195.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
186.00	195.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
195.00			160046 MON ADF/RMI-2
195.00			16XB91 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDANC
195.00	207.00	12.00	1P16XX01 N 515, TURN RT, HDG 270 DESCEND AND MAINTAIN 6000 FT. CONTACT ATL APPR ON 127.25.
220.00	232.00	12.00	1P16AA91 N 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
240.00			160081 ENTER/ARM NEW ALT IN MCP
240.00	242.47	2.47	2H 33 ROTATE ALT ENG KNOB
240.00	240.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
241.40	242.46	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
242.50	243.92	1.42	2H 28 PRESS ALT ENG MODE S SW
243.90	244.89	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
235.00			160092 ENTER NEW HEADING IN MCP
235.00	237.50	2.50	2H 19 ROTATE TKA SEL KNOB
235.00	238.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
237.50	238.27	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
210.00	220.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
240.00			180092 TUNE ATL APPROACH ON 127.25
248.00			180093 CONTACT ATL APPROACH ON 127.25
251.00	255.00	4.00	1P18YY90 NASA S15, ATL APPR. ROGER.
255.00			00EV03 C/P EXT VIS SCAN
270.00			00EV03 C/P EXT VIS SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L 02 MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A 10 MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K 14 MON MAP VIDEO
250.00	280.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L 02 MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A 10 MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K 14 MON MAP VIDEO
280.00	310.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L 02 MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A 10 MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K 14 MON MAP VIDEO
310.00	340.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L 02 MON VERTICAL SPEED INDIC
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
298.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EV09 C/P EXT VIS SCAN
340.00			00EV04 C/P EXT VIS SCAN

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			168L04 DESCEND THRU 8000.
370.00			16XB94 ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE
374.00	381.00	7.00	1P18BB94 NASA 515. TURN LEFT HEADING 240. DESCEND AND MAINTAIN 8000 FT
380.00			180081 ENTER/ARM NEW ALT IN MCP
380.00	382.47	2.47	2H 33 ROTATE ALT ENG KNOB
380.00	380.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
381.40	382.46	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
382.50	383.92	1.42	2H 28 PRESS ALT ENG MODE S SW
383.80	384.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			180082 ENTER NEW HEADNG IN MCP
385.00	387.50	2.50	2H 19 ROTATE TKA SEL KNOB
385.00	388.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
387.50	388.27	0.77	2H 18 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
390.00			090048 FLIGHT INSTRUMENT SCAN -A2
390.00	420.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
390.00	420.00	30.00	3L 02 MON VERTICAL SPEED INDIC
390.00	420.00	30.00	3A 10 MONITOR AIRSPEED INDIC
390.00	420.00	30.00	2K 14 MON MAP VIDEO
390.00	420.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
390.00	420.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
420.00			090048 FLIGHT INSTRUMENT SCAN -A2
420.00	450.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
420.00	450.00	30.00	3L 02 MON VERTICAL SPEED INDIC
420.00	450.00	30.00	3A 10 MONITOR AIRSPEED INDIC
420.00	450.00	30.00	2K 14 MON MAP VIDEO
420.00	450.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
420.00	450.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
185.00			090051 FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	2J 02 MON PITCH TITUDE INDIC
185.00	195.00	10.00	3L 02 MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K 14 MON MAP VIDEO
185.00	195.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
195.00			160048 MON ADF/RMI-2
195.00			16XL91 VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
196.00	196.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
200.40	210.40	10.00	1D16AA91 MONITOR UPLINK CALL- OUT FROM COPILOT
226.00	227.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
227.00	229.00	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
231.40	241.40	10.00	1D16AL91 MONITOR COPILOT
245.00			16DL91 ARM NEW DL MCP ALT
245.00	245.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
246.00	246.06	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
246.06	246.28	1.42	2H 28 PRESS ALT ENG MODE S SW
246.28	249.06	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
240.00			16DL92 ENGAGE DATA LINKED HEADING IN MCP
240.00	240.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
240.80	241.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
241.90	243.31	1.41	2H 14 PRESS TKA SEL MODE SW
243.30	244.07	0.77	2H 16 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO
210.00	220.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
240.00			160092 TUNE ATL APPROACH ON 127.28
248.00			160L93 MONITOR ATL APPROACH ON 127.28/VHF-2L
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
220.00	250.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L 02 MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A 10 MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K 14 MON MAP VIDEO
220.00	250.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
255.00			00EV03 C/P EXT VIS SCAN
270.00			00EV03 C/P EXT VIS SCAN
290.00			090048 FLIGHT INSTRUMENT SCAN -A2
260.00	280.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
260.00	280.00	30.00	3L 02 MON VERTICAL SPEED INDIC
260.00	280.00	30.00	3A 10 MONITOR AIRSPEED INDIC
260.00	280.00	30.00	2K 14 MON MAP VIDEO
260.00	280.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
260.00	280.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L 02 MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A 10 MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K 14 MON MAP VIDEO
280.00	310.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L 02 MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A 10 MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K 14 MON MAP VIDEO
310.00	340.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL



SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
310.00	340.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L 02 MON VERTICAL SPEED INDIC
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
388.00			030007 ENGINE INSTRUMENT SCAN
395.00			00EY09 C/P EXT VIS SCAN
340.00			00EY04 C/P EXT VIS SCAN
383.00			030007 ENGINE INSTRUMENT SCAN
370.00			18DL04 DESCEND THRU 8000.
370.00			18XL94 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
379.00	380.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
380.80	382.80	2.00	1D18XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER
384.40	390.40	6.00	1D18AL94 MON COPILOT - TURN LEFT HEADING 240. DESCEND AND MAIN- TAIN 8000 MSL.
380.00			18DL81 ARM NEW DL MCP ALT
380.00	380.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
380.80	381.88	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
381.88	383.28	1.42	2H 28 PRESS ALT ENG MODE S SW
383.28	384.08	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
390.00			090048 FLIGHT INSTRUMENT SCAN -A2
390.00	420.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
390.00	420.00	30.00	3L 02 MON VERTICAL SPEED INDIC
390.00	420.00	30.00	3A 10 MONITOR AIRSPEED INDIC
390.00	420.00	30.00	2K 14 MON MAP VIDEO
390.00	420.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
390.00	420.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
420.00			090048 FLIGHT INSTRUMENT SCAN -A2
420.00	450.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
420.00	450.00	30.00	3L 02 MON VERTICAL SPEED INDIC
420.00	450.00	30.00	3A 10 MONITOR AIRSPEED INDIC
420.00	450.00	30.00	2K 14 MON MAP VIDEO

SINCE MISSION START BEGINNING	END	ACTIVITY TIME
420.00	460.00	30.00
420.00	460.00	30.00
340.00	360.00	20.00
363.00		
363.00	363.44	0.44
363.00	363.44	0.44
363.44	363.88	0.44
363.44	363.88	0.44
363.88	364.32	0.44
363.88	364.32	0.44
364.32	364.76	0.44
364.32	364.76	0.44
364.76	365.20	0.44
364.76	365.20	0.44
365.20	365.64	0.44
365.64	366.08	0.44
365.64	366.08	0.44
366.08	366.52	0.44
366.08	366.52	0.44
366.52	366.96	0.44
366.52	366.96	0.44
370.00		

EVENT/PROCEDURE TASK		
2K	46	MON STRAIGHT TREND VECTOR SYMBOL
2K	33	MON CURVED TREND VECTOR SYMBOLS
8A	10	PILOT EXTERNAL VISION SCAN
030007		ENGINE INSTRUMENT SCAN
7F	25	MON ENG NO 1 EPR IND
7F	30	MON ENG NO 2 EPR IND
7F	21	MON NO 1 ENG N1 IND
7F	22	MON NO 2 ENG N1 IND
7F	31	MON ENG NO 1 EXH GAS TEMP IND
7F	32	MON ENG NO 2 EXH GAS TEMP IND
7F	23	MON NO 1 ENG N2 IND
7F	24	MON NO 2 ENG N2 IND
7F	33	MON ENG NO 1 FUEL FLOW INDIC
7F	34	MON ENG NO 2 FUEL FLOW INDIC
7F	09	MON NO 1 ENG OIL PRESS INDIC
7F	10	MON NO 1 ENG OIL TEMP INDIC
7F	18	MON NO 2 ENG OIL TEMP INDIC
7F	11	MON NO 1 ENG OIL QTY INDIC
7F	19	MON NO 2 ENG OIL QTY INDIC
7F	12	MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
16BL04		DESCEND THRU 8000.

C - 3

**B.8 ILS APPROACH WITH WEATHER DEVIATION—ADVANCED FLIGHT DECK**

**Nonflying Pilot**

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
185.00			090051 FLIGHT INSTRUMENT SCAN -A1
185.00			180048 MON ADF/RMI-2
195.00	197.26	2.26	SE 28 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			18XB91 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDANC
195.00	207.00	12.00	1P18XX91 N 515, TURN RT HDG 270 DESCND AND MAINTAIN 8000 FT, CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
214.00	217.00	3.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
207.00	217.00	10.00	1P18XY91 APPROACH, 515 HAS STRONG WX RADAR ECHOES, REQUEST HDG 300, WILL ADVISE CLR.
220.00	232.00	12.00	1P18AA91 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 8000 FT CONTACT ATL 127.25
232.00	239.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
232.00	239.00	7.00	1P18BB91 515, ROGER, HDG 300, MAINTAIN 8000, APPR ON 127.25
240.00			180061 ENTER/ARM NEW ALT IN MCP
240.00			18XL02 BEGIN TURN TO AVOID HEAVY WEATHER
235.00			180082 ENTER NEW HEADING IN MCP
210.00			18BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
240.00			180092 TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	1B 01 MON VHF-2L FREQ IND
240.00	242.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
242.88	244.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME
248.00		
248.00	247.49	1.49
248.40	251.90	3.50
248.40	251.90	3.50
251.90	255.90	4.00
255.00		
255.00	270.00	15.00
270.00		
270.00	285.00	15.00
250.00		
280.00		
310.00		
340.00		
288.00		
288.00	288.44	0.44
288.00	288.44	0.44
288.44	288.88	0.44
288.44	288.88	0.44
288.88	289.32	0.44
288.88	289.32	0.44
289.32	289.76	0.44
289.32	289.76	0.44
289.76	290.20	0.44
289.76	290.20	0.44
290.20	290.64	0.44
290.64	291.08	0.44
290.64	291.08	0.44
291.08	291.52	0.44
291.08	291.52	0.44
291.52	291.96	0.44
291.52	291.96	0.44
295.00		
295.00	340.00	45.00
340.00		
340.00	360.00	20.00
363.00		
363.00	363.44	0.44
363.00	363.44	0.44
363.44	363.88	0.44
363.44	363.88	0.44

EVENT/PROCEDURE TASK
160083 CONTACT ATL APPROACH ON 127.25
1B 05 SET VHF-2 COMM TFR SW TO LEFT
1A 10 ACT PUSH-TO-TALK SW
1P16XX93 ATL APPR,NASA 515 DESCENDING TO 6000.
1P16YY00 NASA 515,ATL APPR, ROGER.
00EV03 C/P EXT VIS SCAN
8A 10 PILOT EXTERNAL VISION SCAN
00EV03 C/P EXT VIS SCAN
8A 10 PILOT EXTERNAL VISION SCAN
080048 FLIGHT INSTRUMENT SCAN -A2
080048 FLIGHT INSTRUMENT SCAN -A2
080048 FLIGHT INSTRUMENT SCAN -A2
080048 FLIGHT INSTRUMENT SCAN -A2
030007 ENGINE INSTRUMENT SCAN
7F 25 MON ENG NO 1 EPR IND
7F 30 MON ENG NO 2 EPR IND
7F 21 MON NO 1 ENG N1 IND
7F 22 MON NO 2 ENG N1 IND
7F 31 MON ENG NO 1 EXH GAS TEMP IND
7F 32 MON ENG NO 2 EXH GAS TEMP IND
7F 23 MON NO 1 ENG N2 IND
7F 24 MON NO 2 ENG N2 IND
7F 33 MON ENG NO 1 FUEL FLOW INDIC
7F 34 MON ENG NO 2 FUEL FLOW INDIC
7F 09 MON NO 1 ENG OIL PRESS INDIC
7F 10 MON NO 1 ENG OIL TEMP INDIC
7F 18 MON NO 2 ENG OIL TEMP INDIC
7F 11 MON NO 1 ENG OIL QTY INDIC
7F 19 MON NO 2 ENG OIL QTY INDIC
7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
00EV09 C/P EXT VIS SCAN
8A 12 PILOT EXTERNAL VISION SCAN
00EV04 C/P EXT VIS SCAN
8A 10 PILOT EXTERNAL VISION SCAN
030007 ENGINE INSTRUMENT SCAN
7F 25 MON ENG NO 1 EPR IND
7F 30 MON ENG NO 2 EPR IND
7F 21 MON NO 1 ENG N1 IND
7F 22 MON NO 2 ENG N1 IND

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
363.88	364.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23 MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F 24 MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			18BL04 DESCEND THRU 8000.
370.00			18XB94 ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	373.00	3.00	1P16AA94 APPROACH, 515 IS CLEAR OF WEATHER
370.00	373.00	3.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
374.00	381.00	7.00	1P16BB94 NABA 515, TURN LEFT HEADING 240, DESCEND AND MAINTAIN 5000 FT
381.00	384.00	3.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
384.00	385.70	1.70	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
381.00	386.00	5.00	1P16CC94 515, ROGER. TURN LT HDB 240, MAINTN 5000.
380.00			180081 ENTER/ARM NEW ALT IN MCP
385.00			180082 ENTER NEW HEADING IN MCP
390.00			080048 FLIGHT INSTRUMENT SCAN -A2
420.00			080048 FLIGHT INSTRUMENT SCAN -A2
450.00			080048 FLIGHT INSTRUMENT SCAN -A2
480.00			080048 FLIGHT INSTRUMENT SCAN -A2
510.00			080051 FLIGHT INSTRUMENT SCAN -A1
390.00			00EV08 C/P EXT VIS SCAN
390.00	430.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND

SINCE MISSION START BEGINNING	END
431.32	431.78
431.32	431.78
431.78	432.20
431.78	432.20
432.20	432.64
432.64	433.08
432.64	433.08
433.08	433.52
433.08	433.52
433.52	433.96
433.52	433.96

ACTIVITY TIME
0.44
0.44
0.44
0.44
0.44
0.44
0.44
0.44
0.44
0.44
0.44

EVENT/PROCEDURE  
TASK

7F	23	MON NO 1 ENG N2 IND
7F	24	MON NO 2 ENG N2 IND
7F	33	MON ENG NO 1 FUEL FLOW INDIC
7F	34	MON ENG NO 2 FUEL FLOW INDIC
7F	09	MON NO 1 ENG OIL PRESS INDIC
7F	10	MON NO 1 ENG OIL TEMP INDIC
7F	18	MON NO 2 ENG OIL TEMP INDIC
7F	11	MON NO 1 ENG OIL QTY INDIC
7F	19	MON NO 2 ENG OIL QTY INDIC
7F	12	MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
7F	20	MON NO 2 ENG VIBR

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
150.00			00EV05 C/P EXT VIS SCA"
150.00	175.00	25.00	8A 11 PILOT .NAL VISTON SCA.
185.00			090051 FLIGHT INSTRUMENT SCAN -A1
185.00			100048 MON ADF/RMI-2
185.00	197.20	2.20	SE 20 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			10XL91 VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
196.00	198.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
198.00	200.40	1.00	1X100001 LINE SELECT [ATC UPLINKS PENDING]
200.40	210.40	10.00	1D10XX01 READ -TURN RT HDG 270,DESCND AND MAIN- TAIN 6000 FT.MONITOR ATL APPR ON 127.25
210.40	212.20	1.00	1X100030 LINE SELECT [UNABLE]
212.20	214.00	1.00	1X100024 LINE SELECT [STRONG WX RADAR ECHOES]
214.00	215.00	1.00	1X100014 LINE SELECT [HEADING REQUEST]
215.00	217.00	1.20	1X100033 PRESS KEY [3]
217.00	218.20	1.20	1X100040 PRESS KEY [0]
218.20	219.40	1.20	1X100040 PRESS KEY [0]
219.40	221.20	1.00	1X100029 LINE SELECT [REQ TEM HDG XXX-WILL ADVISE]
220.00	227.00	1.00	1D10XX01 MON INFORMATION MANAGEMENT ATENSON
227.00	228.00	2.00	1D10XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
228.00	231.40	1.00	1X100001 LINE SELECT [ATC UPLINKS PENDING]
231.40	241.40	10.00	1D10XL91 READ -TURN RT HDG 300, DESCEND AND MAINTAIN 6000 MSL MONITOR APPR 127.25
241.40	243.20	1.00	1X100030 LINE SELECT [UNABLE]
245.00			10DL01 ARM NEW DL MCP ALT
240.00			10XL02 BEGIN TURN TO AVOID HEAVY WEATHER

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
240.00			18DL02 ENGAGE DATA LINKED HEADING IN MCP
210.00			18DL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
240.00			160092 TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	18 01 MON VHF-2L FREQ IND
240.00	242.90	2.90	18 02 SET VHF-2L FREQ- WHOLE NO.8
242.88	244.88	1.98	18 03 SET VHF-2L FREQ - FRACTIONS
248.00			18DL03 MONITOR ATL APPROACH ON 127.25/VHF-2L
248.00	247.49	1.49	18 06 SET VHF-2 COMM TFR SW TO LEFT
247.50	249.50	2.00	18 04 ADJ VHF-2 VOLUME
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
255.00			00EV03 C/P EXT VIS SCAN
255.00	270.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00			00EV03 C/P EXT VIS SCAN
270.00	285.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 28 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	288.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	288.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
288.32	288.76	0.44	7F 23 MON NO 1 ENG N2 IND
288.32	288.76	0.44	7F 24 MON NO 2 ENG N2 IND
288.76	288.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
288.76	288.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
288.20	288.64	0.44	7F 08 MON NO 1 ENG OIL PRESS INDIC
288.64	289.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
288.64	289.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
289.08	289.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
289.08	289.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
289.52	289.96	0.44	7F 12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC
289.52	289.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
285.00			00EV09 C/P EXT VIS SCAN
285.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN

SINCE MISSION START BEGINNING	END	ACTIVITY TIME
340.00		
340.00	360.00	20.00
363.00		
363.00	363.44	0.44
363.00	363.44	0.44
363.44	363.88	0.44
363.44	363.88	0.44
363.88	364.32	0.44
363.88	364.32	0.44
364.32	364.76	0.44
364.32	364.76	0.44
364.76	365.20	0.44
364.76	365.20	0.44
365.20	365.64	0.44
365.64	366.08	0.44
365.64	366.08	0.44
366.08	366.52	0.44
366.08	366.52	0.44
366.52	366.96	0.44
366.52	366.96	0.44
370.00		
370.00		
370.00	371.80	1.80
371.80	373.80	1.80
379.00	380.80	1.80
380.80	382.80	2.00
382.80	384.40	1.80
384.40	390.40	6.00
390.40	392.20	1.80
398.00		
398.00		
420.00		
450.00		
480.00		
510.00		

EVENT/PROCEDURE TASK		
00EY04	C/P EXT VIS SCAN	
8A	10 PILOT EXTERNAL VISION SCAN	
030007	ENGINE INSTRUMENT SCAN	
7F	25 MON ENG NO 1 EPR IND	
7F	30 MON ENG NO 2 EPR IND	
7F	21 MON NO 1 ENG N1 IND	
7F	22 MON NO 2 ENG N1 IND	
7F	31 MON ENG NO 1 EXH GAS TEMP IND	
7F	32 MON ENG NO 2 EXH GAS TEMP IND	
7F	23 MON NO 1 ENG N2 IND	
7F	24 MON NO 2 ENG N2 IND	
7F	33 MON ENG NO 1 FUEL FLOW INDIC	
7F	34 MON ENG NO 2 FUEL FLOW INDIC	
7F	08 MON NO 1 ENG OIL PRESS INDIC	
7F	10 MON NO 1 ENG OIL TEMP INDIC	
7F	18 MON NO 2 ENG OIL TEMP INDIC	
7F	11 MON NO 1 ENG OIL QTY INDIC	
7F	19 MON NO 2 ENG OIL QTY INDIC	
7F	12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC	
7F	20 MON NO 2 ENG VIBR AMPLITUDE INDIC	
168L04	DESCEND THRU 8800.	
16XL94	ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE	
1X160002	LINE SELECT [REQUEST FOR CLEARANCE]	
1X160020	LINE SELECT [RESUME ON-COURSE]	
1D16XX01	MON INFORMATION MANAGEMENT ATTENTION	
1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNOB] AMBER	
1X160001	LINE SELECT [ATC UPLINKS PENDING]	
1D16XL94	READ - TURN LEFT HEADING 240. DESCEND < MAINTAIN 6000 MSL.	
1X160030	LINE SELECT [UNABLE]	
16DL81	ARM NEW DL MCP ALT	
090048	FLIGHT INSTRUMENT SCAN -A2	
090048	FLIGHT INSTRUMENT SCAN -A2	
090048	FLIGHT INSTRUMENT SCAN -A2	
090048	FLIGHT INSTRUMENT SCAN -A2	
090051	FLIGHT INSTRUMENT SCAN -A1	

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME
390.00		
390.00	430.00	40.00
430.00		
430.00	430.44	0.44
430.00	430.44	0.44
430.44	430.88	0.44
430.44	430.88	0.44
430.88	431.32	0.44
430.88	431.32	0.44
431.32	431.76	0.44
431.32	431.76	0.44
431.76	432.20	0.44
431.76	432.20	0.44
432.20	432.64	0.44
432.64	433.08	0.44
432.64	433.08	0.44
433.08	433.52	0.44
433.08	433.52	0.44
433.52	433.96	0.44
433.52	433.96	0.44

EVENT/PROCEDURE TASK		
00EV08	C/P EXT VIS SCAN	
8A	11 PILOT EXTERNAL VISION SCAN	
030007	ENGINE INSTRUMENT SCAN	
7F	26 MON ENG NO 1 EPR IND	
7F	30 MON ENG NO 2 EPR IND	
7F	21 MON NO 1 ENG N1 IND	
7F	22 MON NO 2 ENG N1 IND	
7F	31 MON ENG NO 1 EXH GAS TEMP IND	
7F	32 MON ENG NO 2 EXH GAS TEMP IND	
7F	23 MON NO 1 ENG N2 IND	
7F	24 MON NO 2 ENG N2 IND	
7F	33 MON ENG NO 1 FUEL FLOW INDIC	
7F	34 MON ENG NO 2 FUEL FLOW INDIC	
7F	09 MON NO 1 ENG OIL PRESS INDIC	
7F	10 MON NO 1 ENG OIL TEMP INDIC	
7F	18 MON NO 2 ENG OIL TEMP INDIC	
7F	11 MON NO 1 ENG OIL QTY INDIC	
7F	19 MON NO 2 ENG OIL QTY INDIC	
7F	12 MON NO 1 ENG VIBRA- TION AMPLITUDE INDIC	
7F	20 MON NO 2 ENG VIBR	

## **B.9 ILS MISSED APPROACH WITH REROUTE—CONVENTIONAL FLIGHT DECK**

**Flying Pilot**

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
15.00			100062 LANDING CHECKL
047.00	047.00	0.00	1P 10 MONITOR CALL-OUT
047.00	048.00	0.40	1P 14 MONITOR CALL-OUT
050.00	050.70	0.70	1P 10 MONITOR CALL-OUT
051.00	052.30	1.30	1P100079 CALL OUT -[ARMED GREEN LIGHT]
054.50	055.20	0.70	1P 10 MONITOR CALL-OUT
055.20	056.20	1.00	1P 10 MONITOR CALL-OUT
056.20	056.00	0.40	1P 14 MONITOR CALL-OUT
058.00	059.70	1.10	1P 12 MONITOR CALL-OUT
050.00			000000 PILOT EXT VIB SCAN
050.00	055.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
065.00			10FB17 WINDSHEAR WARNING
065.00	075.00	10.00	1P10FB27 N 515, DC-8 2 MI AND REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L, MAX THRST REQ-D
080.00			10FB04 INITIATE GO-AROUND BY PILOT
080.41	083.71	3.30	1P10FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
080.41	082.85	2.44	4B 08 ADVANCE THRUST LVRS TO TAKEOFF THRUST
082.00			10FB06 COPILOT GOAROUND ACTIVITIES
085.40	086.10	0.70	1P 10 MONITOR CALL-OUT
086.15	086.45	0.30	1P 10 MONITOR REPORT
087.80	089.80	2.00	1P 02 MONITOR CALL-OUT
082.00			10FB10 MISSED APPROACH AND HOLDING CLEARANCE
082.00	085.50	3.50	1P10FB22 RADIO COMM-ATL TWR, 515 IS EXECUTING A MISSED APPROACH
086.50	090.90	5.40	1P10FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000, SAY YOUR INTENTIONS)
090.80	098.90	8.00	1P10FB23 515, ROGER, RW HDG TO 3000, REQST TO HOLD FOR 15 MINS TO ASSESS THE WX.
090.00	099.00	10.00	1P10FB24 NA 515, CLRD TO MACEY INT, TURN LT HDG 060, INTCPT/PROCEED VIA AHN RADIAL 322, CLIMB

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
019.00	029.00	10.00	1P18FB25 AND MAINTAIN FL 180. HOLD N.E. OF MACKEY AS PUBLISHED, EFC AT XXXX Z.
029.00	043.00	14.00	1P18FB26 6, ROG, CLRD TO MACKEY 080 TO AMN R-322. MNT FL 180, HOLD N.E. OF MACKEY AS PUBLISHED, EFC
083.00			140003 ALTITUDE CHANGE PROC
083.00	093.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
083.00	093.00	10.00	3L 02 MON VERTICAL SPEED INDIC
083.00	083.77	0.77	3H 02 MON CORR BARO ALT INDIC
083.00	093.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
083.00	085.82	2.82	4B 03 ACTUATE BOTH THROTTLES
083.00	085.37	2.37	3F 01 MON MACH NO INDIC
093.00			140003 ALTITUDE CHANGE PROC
093.00	093.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
093.00	093.00	10.00	3L 02 MON VERTICAL SPEED INDIC
093.00	093.77	0.77	3H 02 MON CORR BARO ALT INDIC
093.00	093.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
093.00	095.82	2.82	4B 03 ACTUATE BOTH THROTTLES
093.00	095.37	2.37	3F 01 MON MACH NO INDIC
093.00			140003 ALTITUDE CHANGE PROC
093.00	013.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
093.00	013.00	10.00	3L 02 MON VERTICAL SPEED INDIC
093.00	093.77	0.77	3H 02 MON CORR BARO ALT INDIC
093.00	013.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
093.00	095.82	2.82	4B 03 ACTUATE BOTH THROTTLES
093.00	095.37	2.37	3F 01 MON MACH NO INDIC
013.00			140003 ALTITUDE CHANGE PROC
013.00	023.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
013.00	023.00	10.00	3L 02 MON VERTICAL SPEED INDIC
013.00	013.77	0.77	3H 02 MON CORR BARO ALT INDIC
013.00	023.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
013.00	015.82	2.82	4B 03 ACTUATE BOTH THROTTLES
013.00	015.37	2.37	3F 01 MON MACH NO INDIC
023.00			140003 ALTITUDE CHANGE PROC
023.00	033.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
023.00	033.00	10.00	3L 02 MON VERTICAL SPEED INDIC
023.00	023.77	0.77	3H 02 MON CORR BARO ALT INDIC
023.00	033.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
023.00	025.82	2.82	4B 03 ACTUATE BOTH THROTTLES
023.00	025.37	2.37	3F 01 MON MACH NO INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
902.00			16FB07 P/CP BOAROUND COMMUNICATIONS
902.00	906.50	4.50	1P16FB10 CALL-OUT (SET FLAPS 8 REPORT 3000 REPORT 170 KNOTS)
902.00			16FB08 CP FLAP SET AND CALLOUTS
907.00	907.70	0.70	1P 07 MONITOR REPORT
910.00	910.00	0.70	1P 07 MONITOR REPORT
912.00	913.00	0.70	1P160058 CALL OUT -[FLAPS 1]
919.00	920.20	0.70	1P 07 MONITOR REPORT
923.00	923.70	0.70	1P16FB29 CALL OUT [FLAPS UP]
928.00	929.20	0.70	1P 07 MONITOR REPORT

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
85.00			160062 LANDING CHECKL'
847.00	847.80	0.80	1P 10 MONITOR CALL-OUT
847.80	848.00	0.40	1P 14 MONITOR CALL-OUT
850.00	850.70	0.70	1P 10 MONITOR CALL-OUT
851.00	852.30	1.30	1P100079 CALL OUT - (ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10 MONITOR CALL-OUT
855.20	856.20	1.00	1P 10 MONITOR CALL-OUT
858.20	858.60	0.40	1P 14 MONITOR CALL-OUT
858.60	859.70	1.10	1P 12 MONITOR CALL-OUT
850.00			000001 PILOT EYE HND CHN
850.00	856.00	5.00	9A 10 PILOT EXTERNAL VISION SCAN
865.00			16DL62 WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00	866.00	1.00	1D16XX01 MON INFORMATION MANAGEMENT MASTER AURAL
866.60	868.80	2.00	1D16XX09 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) GREEN REVERSE VIDEO
870.40	878.40	8.00	1D16XY62 MONITOR COPILOT
880.00			16FB04 INITIATE GO-AROUND BY PILOT
880.41	883.71	3.30	1P16FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
880.41	882.85	2.44	4B 06 ADVANCE THRUST LVRS TO TAKEOFF THRUST
882.00			16FB05 COPILOT GOAROUND ACTIVITIES
885.40	886.10	0.70	1P 10 MONITOR CALL-OUT
889.15	889.45	0.30	1P 10 MONITOR REPORT
887.80	889.80	2.00	1P 02 MONITOR CALL-OUT
882.00			15YL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
887.00	888.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT MASTER AURAL
888.80	890.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) GREEN
828.40	838.40	10.00	1D16AL01 MON COPILOT
838.40	848.40	10.00	1D16AL02 MON COPILOT
883.00			140003 ALTITUDE CHANGE PROC
883.00	883.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE ALT
883.00	883.00	10.00	3L 02 MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H 02 MON CORR BARO ALT INDIC
883.00	883.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B 03 ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F 01 MON MACH NO INDIC
893.00			140003 ALTITUDE CHANGE PROC
893.00	893.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE ALT
893.00	893.00	10.00	3L 02 MON VERTICAL SPEED INDIC



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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
893.00	893.77	0.77	3H 02 MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B 03 ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F 01 MON MACH NO INDIC
903.00			140003 ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L 02 MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H 02 MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B 03 ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F 01 MON MACH NO INDIC
913.00			140003 ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L 02 MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H 02 MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B 03 ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F 01 MON MACH NO INDIC
923.00			140003 ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L 02 MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H 02 MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B 03 ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F 01 MON MACH NO INDIC
933.00			16FB07 P/CP BOAROUND COMMUNICATIONS
933.00	903.50	4.50	1P16FB10 CALL-OUT (SET FLAPS & REPORT 3000 REPORT 170 KNOTS)
933.00			16FB08 CP FLAP SET AND CALLOUTS
904.00	904.70	0.70	1P 07 MONITOR REPORT
916.50	916.50	0.70	1P 07 MONITOR REPORT
909.50	910.50	0.70	1P160058 CALL OUT -[FLAPS 13]
916.50	917.20	0.70	1P 07 MONITOR REPORT
920.00	920.70	0.70	1P160625 CALL OUT [FLAPS UP]
925.50	926.20	0.70	1P 07 MONITOR REPORT

**B.10 ILS MISSED APPROACH WITH REROUTE—CONVENTIONAL FLIGHT DECK**

**Nonflying Pilot**

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			160002 LANDING CHECKL
448.00	848.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.80	0.80	1P160076 CALL OUT -[RECALL]
847.80	848.00	0.40	1P160077 CALL OUT -[CHECKED]
848.00	848.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.80	0.40	1P160082 CALL OUT -[FLAPS]
858.80	859.70	1.10	1P160083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
860.00			00EV21 PILOT EXT VIS SCAN
865.00			16FB17 WINDSHEAR WARNING
868.00	875.00	10.00	1P16FB27 N 515.00-0 3 MI AND REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L MAX THRST REQ'D
875.00	877.00	2.00	1P16FB28 515. ROGER WINDSHEAR
880.00			16FB04 INITIATE GO-AROUND BY PILOT
880.41	883.61	3.20	1P 15 MONITOR CALL-OUT
882.00			16FB05 COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02 MON CORR BARO ALT INDIC
882.00	882.78	0.78	7F 27 MON ENG NO 1 EPR BUG
882.00	882.78	0.78	7F 29 MON ENG NO 2 EPR BUG
882.00	882.00	10.00	3A 10 MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	886.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
886.40	886.40	1.00	1P16FB04 CALL-OUT (FLAPS 15)
887.40	888.48	3.08	4D 01 SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
890.48	893.19	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
893.15	894.55	1.40	1P16FB05 CALL-OUT (BUG - 15)
897.80	898.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
007.00	009.00	2.00	1P10FB06 CALL-OUT (GEAR UP, OFF)
002.00			10FB10 MISSED APPROACH AND HOLDING CLEARANCE
005.50	009.00	3.40	1P10FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 SAY YOUR INTENTIONS)
009.00	019.00	10.00	1P10FB24 NA 515,CLRD TO MACEY INT.TURN LT HDG 060, INTCPT/PROCEED VIA AHN RADIAL 322.CLIMB
019.00	029.00	10.00	1P10FB25 AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
022.00	029.00	7.00	1P10FB30 COPILOT WRITES DOWN CLEARANCE TO MACEY
003.00			140003 ALTITUDE CHANGE PROC
003.00			140003 ALTITUDE CHANGE PROC
003.00			140003 ALTITUDE CHANGE PROC
013.00			140003 ALTITUDE CHANGE PROC
023.00			140003 ALTITUDE CHANGE PROC
002.00			10FB07 P/CP GOAROUND COMMUNICATIONS
002.00	008.50	4.50	1P 10 MONITOR CALL OUT
002.00			10FB08 CP FLAP SET AND CALLOUTS
002.00	004.00	2.00	4E 09 SET FLAP CONT LEVER TO FLAPS 5
004.00	006.02	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
006.02	007.72	0.80	1P10FB11 CALL-OUT (FLAPS 5)
007.00	009.01	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
009.01	011.03	2.02	7F 25 MON ENG NO 1 EPR IND
009.01	011.03	2.02	7F 30 MON ENG NO 2 EPR IND
011.00	010.00	7.00	3H 06 MON ALTIMETER
010.00	010.00	0.00	1P10FB12 CALL-OUT (3000)
012.00	013.00	0.70	1P 07 MONITOR REPORT
014.00	010.00	2.00	4E 07 SET FLAP CONT LEVER TO FLAPS 1
017.00	019.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
019.50	020.20	0.70	1P100050 CALL OUT -(FLAPS 1)
020.50	022.52	2.02	7F 25 MON ENG NO 1 EPR IND
020.50	022.52	2.02	7F 30 MON ENG NO 2 EPR IND
023.00	023.70	0.70	1P 07 MONITOR REPORT
024.00	025.00	1.00	4E 06 SET FLAP CONT LEVER TO FLAPS 0
026.00	029.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
026.50	029.20	0.70	1P10FB29 CALL OUT (FLAPS UP)

SINCE MISSION START BEGINNING	END	ACTIVITY TIME
45.00		
045.00	046.00	1.00
047.00	047.00	0.00
047.00	048.00	0.40
048.00	049.00	1.00
050.00	050.70	0.70
051.00	052.30	1.30
052.50	053.50	1.00
054.50	055.20	0.70
055.20	056.20	1.00
056.20	057.20	1.00
058.20	058.60	0.40
058.60	059.70	1.10
061.10	062.20	1.10
061.10	062.20	1.10
060.00		
065.00		
065.00	066.00	1.00
066.00	068.00	2.00
068.00	070.40	1.00

EVENT/PROCEDURE TASK
100062 LANDING CHECK1
08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P100076 CALL OUT -[RECALL]
1P100077 CALL OUT -[CHECKED]
08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P100078 CALL OUT -[SPEED BRAKES]
1P 02 MONITOR CALL-OUT
08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P100080 CALL OUT -[LANDING GEAR]
1P100081 CALL OUT -[DOWN, THREE GREEN]
08090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P100082 CALL OUT -[FLAPS]
1P100083 CALL OUT -[FIFTEEN GREEN LIGHT]
1P100084 CALL OUT -[CHECKLIST COMPLETE]
1P 12 MONITOR CALL-OUT
00EY21 PILOT EXT VIS SCAN
10DL02 WINDSHEAR WARNING (FROM DC-8 AHEAD)
1D10XX01 MON INFORMATION MANAGEMENT MASTER AURAL
1D10XX09 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN REVERSE VIDEO
1X100001 LINE SELECT [ATC UPLINKS PENDING]

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
070.40	078.40	8.00	1D16XX02 READ-XXXX Z.DC-9 REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L MAX THRUST REQ-D
078.40	080.20	1.80	1X100045 LINE SELECT [ ACKNOWLEDGE ]
080.00			10FB04 INITIATE GO-AROUND BY PILOT
080.41	083.61	3.20	1P 15 MONITOR CALL-OUT
082.00			10FB05 COPILOT GOAROUND ACTIVITIES
082.00	082.77	0.77	3H 02 MON CORR BARO ALT INDIC
082.00	082.76	0.76	7F 27 MON ENG NO 1 EPR BUG
082.00	082.76	0.76	7F 28 MON ENG NO 2 EPR BUG
082.00	082.00	10.00	3A 10 MONITOR AIRSPEED INDIC
082.00	082.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
083.40	086.42	2.02	4E 16 MONITOR FLAP POSITION INDICATOR
085.40	086.40	1.00	1P10FB04 CALL-OUT (FLAPS 15)
087.40	090.46	3.06	4D 01 SET LNDG GEAR LVR TO UP POSITION
087.40	087.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
087.40	087.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
090.46	093.19	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
093.15	094.55	1.40	1P10FB05 CALL-OUT (BUG + 15)
097.60	098.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
097.60	098.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF
097.60	099.80	2.00	1P10FB06 CALL-OUT (GEAR UP, OFF)
092.00			10YL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
092.00	093.60	1.60	1X100002 LINE SELECT [REQUEST FOR CLEARANCE]
093.60	095.60	1.80	1X100010 LINE SELECT [MAKING MISSED APPROACH]
095.60	096.60	1.20	1X100031 PRESS KEY [1]
096.60	098.00	1.20	1X100044 PRESS [ENT]
098.00	099.20	1.20	1X100036 PRESS KEY [6]
099.20	099.40	1.20	1X100044 PRESS [ENT]
099.40	092.20	1.80	1X100023 LINE SELECT [ENTER HOLDING FOR XX MIN]
097.00	098.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT MASTER AURAL
098.60	099.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN
026.60	028.40	1.80	1X100001 LINE SELECT [ATC UPLINKS PENDING]
026.40	038.40	10.00	1D16XL01 READ-CLRD TO MACEY INT, TURN LT HDG 080, INTCPT AND PROCEED VIA ANN R-822, CLIMB
038.40	048.40	10.00	1D16XL02 AND MAINTAIN FL100, HOLD HE OF MACEY AS PUBLSHD, EPC XXXX Z.
048.40	050.20	1.80	1X100041 LINE SELECT [WILCO]
050.20	052.00	1.80	1X100047 LINE SELECT [PRINT MESSAGE]

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
883.00			140003 ALTITUDE CHANGE PROC
883.00			140003 ALTITUDE CHANGE PROC
903.00			140003 ALTITUDE CHANGE PROC
913.00			140003 ALTITUDE CHANGE PROC
923.00			140003 ALTITUDE CHANGE PROC
899.00			16FB07 P/CP GOAROUND COMMUNICATIONS
899.00	903.50	4.50	1P 18 MONITOR CALL OUT
899.00			16FB08 CP FLAP SET AND CALLOUTS
899.00	901.89	2.89	4E 09 SET FLAP CONT LEVER TO FLAPS 8
901.89	903.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
903.92	904.72	0.80	1P16FB11 CALL-OUT (FLAPS 8)
904.08	908.81	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
908.81	908.83	2.02	7F 25 MON ENG NO 1 EPR IND
908.81	908.83	2.02	7F 30 MON ENG NO 2 EPR IND
908.89	915.89	7.00	3H 06 MON ALTIMETER
915.89	918.89	0.80	1P16FB12 CALL-OUT (3000)
909.89	910.89	0.70	1P 07 MONITOR REPORT
911.00	913.89	2.89	4E 07 SET FLAP CONT LEVER TO FLAPS 1
914.00	918.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
918.50	917.20	0.70	1P160058 CALL OUT -(FLAPS 1)
917.50	919.52	2.02	7F 25 MON ENG NO 1 EPR IND
917.50	919.52	2.02	7F 30 MON ENG NO 2 EPR IND
920.00	920.70	0.70	1P 07 MONITOR REPORT
921.00	922.98	1.98	4E 06 SET FLAP CONT LEVER TO FLAPS 0
923.00	925.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
925.50	926.20	0.70	1P16FB29 CALL OUT (FLAPS UP)

**B.11 ILS MISSED APPROACH WITH REROUTE—ADVANCED FLIGHT DECK**

**Flying Pilot**

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			160082 LANDING CHECKL
047.00	047.80	0.80	1P 10 MONITOR CALL-OUT
047.60	048.00	0.40	1P 14 MONITOR CALL-OUT
050.00	050.70	0.70	1P 10 MONITOR CALL-OUT
051.00	052.30	1.30	1P160079 CALL OUT -(ARMED - GREEN LIGHT)
054.60	055.20	0.70	1P 10 MONITOR CALL-OUT
055.20	056.20	1.00	1P 10 MONITOR CALL-OUT
058.20	058.60	0.40	1P 14 MONITOR CALL-OUT
058.60	059.70	1.10	1P 12 MONITOR CALL-OUT
050.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
050.00	080.00	30.00	2K 14 MON MAP VIDEO
050.00	080.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
050.00	080.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
050.00	080.00	30.00	2J 13 MON ILS BOX INDIC
050.00	080.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
050.00	080.00	30.00	2J 01 MON ROLL ATT INDIC
050.00	080.00	30.00	2J 19 MON PITCH REF INDIC
050.00	080.00	30.00	3A 10 MONITOR AIRSPEED INDIC
065.00			00EV02 C/P EXT VIS SCAN
065.00			16FB17 WINDSHEAR WARNING
065.00	075.00	10.00	1P16FB27 N 515,DC-8 3 MI AND REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L,MAX THRST REQ-D
080.00			18YL01 INITIATE GO-AROUND
080.00	083.30	3.30	1P16FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
080.00	082.30	2.30	4B 09 PRESS THROTTLE GO- AROUND SWITCHES
082.00			16FB05 COPILOT GOAROUND ACTIVITIES
083.40	083.10	0.70	1P 10 MONITOR CALL-OUT
083.15	083.45	0.30	1P 16 MONITOR REPORT

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
087.00	089.00	2.00	1P 02 MONITOR CALL-OUT
082.00			10FB10 MISSED APPROACH AND HOLDING CLEARANCE
082.00	085.50	3.50	1P10FB22 RADIO COMM-ATL TWR. 515 IS EXECUTING A MISSED APPROACH
085.50	090.90	5.40	1P10FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000, SAY YOUR INTENTIONS)
090.90	088.90	8.00	1P10FB23 515, ROGER. RW HDG TO 3000. REQST TO HOLD FOR 15 MINS TO ASSESS THE WX.
089.00	019.00	10.00	1P10FB24 NA 515, CLRD TO MACEY INT. TURN LT HDG 080, INTCPT/PROCEED VIA AHN RADIAL 322. CLIMB
019.00	020.00	10.00	1P10FB25 AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
029.00	043.00	14.00	1P10FB26 5, ROG. CLRD TO MACEY 080 TO AHN R-322. MNT FL 180. HOLD N.E. OF MACEY AS PUBLISHED. EFC
083.00			140003 ALTITUDE CHANGE PROC
083.00	093.00	10.00	4A 20 ACT FLT CONTROL TO CHANGE ALT
083.00	093.00	10.00	3L 02 MON VERTICAL SPEED INDIC
083.00	083.77	0.77	3H 02 MON CORR BARO ALT INDIC
083.00	083.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
083.00	085.02	2.02	4B 03 ACTUATE BOTH THROTTLES
083.00	085.37	2.37	3F 01 MON MACH NO INDIC
093.00			140003 ALTITUDE CHANGE PROC
093.00	003.00	10.00	4A 20 ACT FLT CONTROL TO CHANGE ALT
093.00	003.00	10.00	3L 02 MON VERTICAL SPEED INDIC
093.00	093.77	0.77	3H 02 MON CORR BARO ALT INDIC
093.00	003.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
093.00	095.02	2.02	4B 03 ACTUATE BOTH THROTTLES
093.00	095.37	2.37	3F 01 MON MACH NO INDIC
002.00			10FB07 P/CP GOAROUND COMMUNICATIONS
002.00	008.50	4.50	1P10FB10 CALL-OUT (SET FLAPS 5 REPORT 3000 REPORT 170 KNOTS)
002.00			10FB08 CP FLAP SET AND CALLOUTS
007.00	007.70	0.70	1P 07 MONITOR REPORT
010.00	010.50	0.70	1P 07 MONITOR REPORT
012.00	013.50	0.70	1P100050 CALL OUT -(FLAPS 13
010.50	020.20	0.70	1P 07 MONITOR REPORT
023.00	023.70	0.70	1P10FB20 CALL OUT [FLAPS UP]
020.50	020.20	0.70	1P 07 MONITOR REPORT
003.00			140003 ALTITUDE CHANGE PROC
003.00	013.00	10.00	4A 20 ACT FLT CONTROL TO CHANGE ALT
003.00	013.00	10.00	3L 02 MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
903.00	903.77	0.77	3H 02 MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
903.00	903.82	2.82	4B 03 ACTUATE BOTH THROTTLES
903.00	903.37	2.37	3F 01 MON MACH NO INDIC
913.00			140003 ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L 02 MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H 02 MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
913.00	913.82	2.82	4B 03 ACTUATE BOTH THROTTLES
913.00	913.37	2.37	3F 01 MON MACH NO INDIC
923.00			140003 ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L 02 MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H 02 MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
923.00	923.82	2.82	4B 03 ACTUATE BOTH THROTTLES
923.00	923.37	2.37	3F 01 MON MACH NO INDIC
930.00			18YB01 ENTER ROUTE TO MACEY IN FLIGHT MANAGEMENT COMPUTER
987.55	992.55	5.00	2K 59 MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
988.90	995.90	2.00	2K 60 MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
995.90	997.27	1.37	2H 35 PRESS HOR PATH MODE SW
997.27	998.03	0.76	2H 36 MON HOR PATH MODE LT GREEN - HOR PATH MODE ENGAGED
998.07	999.43	1.36	2H 39 PRESS VERT PATH MODE SW
999.43	1000.21	0.78	2H 40 MON VERT PATH MODE L GREEN - VERT PATH MODE ENGAGED
933.00			140003 ALTITUDE CHANGE PROC
933.00	943.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
933.00	943.00	10.00	3L 02 MON VERTICAL SPEED INDIC
933.00	933.77	0.77	3H 02 MON CORR BARO ALT INDIC
933.00	943.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
933.00	933.82	2.82	4B 03 ACTUATE BOTH THROTTLES
933.00	933.37	2.37	3F 01 MON MACH NO INDIC
943.00			140003 ALTITUDE CHANGE PROC
943.00	953.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
943.00	963.00	10.00	3L 02 MON VERTICAL SPEED INDIC
943.00	943.77	0.77	3H 02 MON CORR BARO ALT INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
943.00	983.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
943.00	945.82	2.82	4B 03 ACTUATE BOTH THROTTLES
943.00	945.37	2.37	3F 01 MON MACH NO INDIC
953.00			140003 ALTITUDE CHANGE PROC
953.00	983.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
953.00	983.00	10.00	3L 02 MON VERTICAL SPEED INDIC
953.00	953.77	0.77	3H 02 MON CORR BARO ALT INDIC
953.00	983.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
953.00	955.82	2.82	4B 03 ACTUATE BOTH THROTTLES
953.00	955.37	2.37	3F 01 MON MACH NO INDIC
963.00			140003 ALTITUDE CHANGE PROC
963.00	973.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
963.00	973.00	10.00	3L 02 MON VERTICAL SPEED INDIC
963.00	963.77	0.77	3H 02 MON CORR BARO ALT INDIC
963.00	973.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
963.00	965.82	2.82	4B 03 ACTUATE BOTH THROTTLES
963.00	965.37	2.37	3F 01 MON MACH NO INDIC
973.00			140003 ALTITUDE CHANGE PROC
973.00	983.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
973.00	983.00	10.00	3L 02 MON VERTICAL SPEED INDIC
973.00	973.77	0.77	3H 02 MON CORR BARO ALT INDIC
973.00	983.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
973.00	975.82	2.82	4B 03 ACTUATE BOTH THROTTLES
973.00	975.37	2.37	3F 01 MON MACH NO INDIC
983.00			140003 ALTITUDE CHANGE PROC
983.00	993.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
983.00	993.00	10.00	3L 02 MON VERTICAL SPEED INDIC
983.00	983.77	0.77	3H 02 MON CORR BARO ALT INDIC
983.00	993.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
983.00	985.82	2.82	4B 03 ACTUATE BOTH THROTTLES
983.00	985.37	2.37	3F 01 MON MACH NO INDIC

SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			180062 LANDING CHECK 1
47.00	047.00	0.00	1P 10 MONITOR OUT
047.00	048.00	0.40	1P 14 MONITOR CALL-OUT
050.00	050.70	0.70	1P 10 MONITOR CALL-OUT
051.00	052.30	1.30	1P180070 CALL OUT -[ARMED - GREEN LIGHT]
054.30	055.20	0.70	1P 10 MONITOR CALL-OUT
055.20	056.20	1.00	1P 10 MONITOR CALL-OUT
056.20	058.00	0.40	1P 14 MONITOR CALL-OUT
058.00	059.70	1.10	1P 12 MONITOR CALL-OUT
050.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
050.00	060.00	30.00	2K 14 MON MAP VIDEO
050.00	060.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
050.00	060.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
050.00	060.00	30.00	2J 13 MON ILS BOX INDIC
050.00	060.00	30.00	2J 04 MON FLT PATH ACCEL INDIC
050.00	060.00	30.00	2J 01 MON ROLL ATT INDIC
050.00	060.00	30.00	2J 19 MON PITCH REF INDIC
050.00	060.00	30.00	3A 10 MONITOR AIRSPEED INDIC
065.00			00EY02 C/P EXT VIS SCAN
065.00			18DL62 WINDSHEAR WARNING (FROM DC-9 AHEAD)
065.00	066.00	1.00	1D18XX01 MON INFORMATION MANAGEMENT ATTENTION
066.00	068.00	2.00	1D18XX08 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDQ] RED
070.40	070.40	0.00	1D18XY62 MONITOR COPILOT
080.00			18YL01 INITIATE GO-AROUND
080.00	083.30	3.30	1P18PB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
080.00	082.50	2.50	4B 00 PRESS THROTTLE GO- AROUND SWITCHES

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
882.00			18FB05 COPILOT BOAROUND ACTIVITIES
885.40	886.10	0.70	1P 10 MONITOR CALL-OUT
883.15	883.45	0.30	1P 18 MONITOR REPORT
887.80	889.80	2.00	1P 02 MONITOR CALL-OUT
882.00			18TL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
887.00	888.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATTENSON
888.80	890.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PRDG) AMBER
928.40	938.40	10.00	1D18AL01 MON COPILOT
928.40	938.40	10.00	2K 59 MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
938.40	948.40	10.00	1D18AL02 MON COPILOT
950.00	952.08	2.08	2L 19 MON LINE 8 MESSAGE [TEMP F-PLN UPDATED]
952.00	953.42	1.42	2L 21 PRESS EXEC KEY
953.50	955.50	2.00	2K 80 MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
955.50	956.87	1.37	2H 35 PRESS HOR PATH MODE SW
956.90	957.88	0.78	2H 38 MON HOR PATH MODE LT GREEN - HOR PATH MODE ENGAGED
957.70	959.08	1.38	2H 39 PRESS VERT PATH MODE SW
959.10	959.88	0.78	2H 40 MON VERT PATH MODE L GREEN - VERT PATH MODE ENGAGED
883.00			140003 ALTITUDE CHANGE PROC
883.00	883.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
883.00	883.00	10.00	3L 02 MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H 02 MON CORR BARO ALT INDIC
883.00	883.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B 03 ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F 01 MON MACH NO INDIC
883.00			140003 ALTITUDE CHANGE PROC
883.00	883.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
883.00	883.00	10.00	3L 02 MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H 02 MON CORR BARO ALT INDIC
883.00	883.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B 03 ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F 01 MON MACH NO INDIC
889.00			18FB07 P/CP BOAROUND COMMUNICATIONS
888.00	893.50	4.50	1P18FB10 CALL-OUT (SET FLAPS 8 REPORT 3000 REPORT 170 KNOTS)
889.00			18FB08 CP FLAP SET AND CALLOUTS
904.00	904.70	0.70	1P 07 MONITOR REPORT
915.88	916.58	0.70	1P 07 MONITOR REPORT

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
909.89	910.89	0.70	1P180058 CALL OUT -[FLAPS 1]
916.50	917.20	0.70	1P 07 MONITOR REPORT
920.00	920.70	0.70	1P18FB29 CALL OUT [FLAPS UP]
925.50	926.20	0.70	1P 07 MONITOR REPORT
903.00			140003 ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L 02 MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H 02 MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B 03 ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F 01 MON MACH NO INDIC
913.00			140003 ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L 02 MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H 02 MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B 03 ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F 01 MON MACH NO INDIC
923.00			140003 ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L 02 MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H 02 MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B 03 ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F 01 MON MACH NO INDIC
940.00			140003 ALTITUDE CHANGE PROC
940.00	950.00	10.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
940.00	950.00	10.00	3L 02 MON VERTICAL SPEED INDIC
940.00	940.77	0.77	3H 02 MON CORR BARO ALT INDIC
940.00	950.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
940.00	942.82	2.82	4B 03 ACTUATE BOTH THROTTLES
940.00	942.37	2.37	3F 01 MON MACH NO INDIC
960.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
970.00			090049 FLIGHT INSTRUMENT SCAN -A2
970.00	1000.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
970.00	1000.00	30.00	3L 02 MON VERTICAL SPEED INDIC
970.00	1000.00	30.00	3A 10 MONITOR AIRSPEED INDIC
970.00	1000.00	30.00	2K 14 MON MAP VIDEO
970.00	1000.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
970.00	1000.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
970.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
980.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
990.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT

**B.12 ILS MISSED APPROACH WITH REROUTE—ADVANCED FLIGHT DECK**

**Nonflying Pilot**

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			180082 LANDING CHECKL
045.00	046.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
047.00	047.60	0.60	1P180076 CALL OUT -[RECALL]
047.60	048.00	0.40	1P180077 CALL OUT -[CHECKED]
048.00	049.00	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
050.00	050.70	0.70	1P180078 CALL OUT -[SPEED BRAKES]
051.00	052.30	1.30	1P 02 MONITOR CALL-OUT
052.50	053.50	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
054.50	055.20	0.70	1P180080 CALL OUT -[LANDING GEAR]
055.20	056.20	1.00	1P180081 CALL OUT -[DOWN, THREE GREEN]
056.20	057.20	1.00	88090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
058.20	058.60	0.40	1P180082 CALL OUT -[FLAPS]
058.60	059.70	1.10	1P180083 CALL OUT -[FIFTEEN GREEN LIGHT]
061.10	062.20	1.10	1P180084 CALL OUT -[CHECKLIST COMPLETE]
061.10	062.20	1.10	1P 12 MONITOR CALL-OUT
060.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
065.00			00EV02 C/P EXT VIS SCAN
065.00	075.00	10.00	0A 10 PILOT EXTERNAL VISION SCAN
065.00			18FB17 WINDSHEAR WARNING
065.00	075.00	10.00	1P18FB27 H 515,DC-9 3 MI AHD REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L,MAX THRST REQ-D
075.00	077.00	2.00	1P18FB28 515, ROGER WINDSHEAR
080.00			18YL01 INITIATE GO-AROUND
080.00	083.20	3.20	1P 15 MONITOR CALL-OUT
082.00			18FB05 COPILOT GOAROUND ACTIVITIES
082.00	082.77	0.77	3H 02 MON CORR BARO ALT INDIC
082.00	082.78	0.78	7F 27 MON ENG NO 1 EPR BUG
082.00	082.78	0.78	7F 28 MON ENG NO 2 EPR BUG
082.00	082.00	10.00	3A 10 MONITOR AIRSPEED INDIC
082.00	082.20	0.20	7B 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
083.40	085.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
085.40	086.40	1.00	1P18FB04 CALL-OUT (FLAPS 15)
087.40	090.46	3.06	4D 01 SET LNDG GEAR LVR TO UP POSITION
087.40	087.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
087.40	087.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
090.46	093.19	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
893.15	894.55	1.40	1P16FB05 CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	898.80	2.00	1P16FB06 CALL-OUT (GEAR UP, OFF)
882.00			16FB16 MISSED APPROACH AND HOLDING CLEARANCE
885.50	890.90	5.40	1P16FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000, SAY YOUR INTENTIONS)
909.00	919.00	10.00	1P16FB24 NA 515, CLRD TO MACEY INT. TURN LT HDG 080, INTCPT/PROCEED VIA AHN RADIAL 322. CLIMB
919.00	929.00	10.00	1P16FB25 AND MAINTAIN FL 100. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
922.00	929.00	7.00	1P16FB30 COPILOT WRITES DOWN CLEARANCE TO MACEY
883.00			140003 ALTITUDE CHANGE PROC
893.00			140003 ALTITUDE CHANGE PROC
902.00			16FB07 P/CP GOAROUND COMMUNICATIONS
902.00	908.50	4.50	1P 19 MONITOR CALL OUT
902.00			16FB08 CP FLAP SET AND CALLOUTS
902.00	904.89	2.89	4E 08 SET FLAP CONT LEVER TO FLAPS 5
904.89	908.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
908.92	907.72	0.80	1P16FB11 CALL-OUT (FLAPS 5)
907.08	909.81	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
909.81	911.83	2.02	7F 25 MON ENG NO 1 EPR IND
909.81	911.83	2.02	7F 30 MON ENG NO 2 EPR IND
911.89	918.89	7.00	3H 08 MON ALTIMETER
918.89	919.89	0.80	1P16FB12 CALL-OUT (3000)
912.89	913.89	0.70	1P 07 MONITOR REPORT
914.00	918.89	2.89	4E 07 SET FLAP CONT LEVER TO FLAPS 1
917.00	919.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
919.50	920.20	0.70	1P160058 CALL OUT -(FLAPS 1)
920.50	922.82	2.02	7F 25 MON ENG NO 1 EPR IND
920.50	922.82	2.02	7F 30 MON ENG NO 2 EPR IND
923.00	923.70	0.70	1P 07 MONITOR REPORT
924.00	925.08	1.08	4E 08 SET FLAP CONT LEVER TO FLAPS 0
928.00	928.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
928.50	929.20	0.70	1P16FB28 CALL OUT (FLAPS UP)
903.00			140003 ALTITUDE CHANGE PROC
913.00			140003 ALTITUDE CHANGE PROC
923.00			140003 ALTITUDE CHANGE PROC
930.00			18YB01 ENTER ROUTE TO MACEY IN FLIGHT MANAGEMENT COMPUTER
930.00	931.35	1.35	2L 37 PRESS A/WPT KEY
931.35	932.70	1.35	2L 44 PRESS H/RTE KEY
932.70	934.05	1.35	2L 50 PRESS N KEY
934.05	935.40	1.35	2L 28 PRESS NO.3 KEY

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
935.40	936.75	1.35	2L 37 PRESS NO.2 KEY
936.75	938.10	1.35	2L 37 PRESS NO.2 KEY
938.10	939.45	1.35	2L 38 PRESS . (DECIMAL PT) KEY
939.45	940.80	1.35	2L 28 PRESS NO.1 KEY
940.80	942.15	1.35	2L 27 PRESS NO.2 KEY
942.15	943.95	1.80	2L 70 LINE SELECT ANH322/ 12 FROM SCRATCH PAD TO [RTE LEGS] PAGE AFTER KATL.
943.95	945.95	2.00	2L 71 OBSERVE ANH01 WAY- POINT INSERTED ON [RTE LEGS] PAGE.
945.95	947.75	1.80	2L 72 LINE SELECT ANH01 TO SCRATCH PAD FROM [RTE LEGS] PAGE
947.75	949.55	1.80	2L 73 LINE SELECT ANH01 FROM SCRATCH PAD TO [DIRECT TO] PROMPT.
949.55	950.90	1.35	2L 48 PRESS M/OS KEY
950.90	952.25	1.35	2L 37 PRESS A/WPT KEY
952.25	953.60	1.35	2L 39 PRESS C KEY
953.60	954.95	1.35	2L 41 PRESS E KEY
954.95	956.30	1.35	2L 61 PRESS Y KEY
956.30	957.65	1.35	2L 38 PRESS . (DECIMAL PT) KEY
957.65	959.00	1.35	2L 28 PRESS NO.1 KEY
959.00	960.35	1.35	2L 33 PRESS NO.8 KEY
960.35	961.70	1.35	2L 36 PRESS NO.0 KEY
961.70	963.05	1.35	2L 35 PRESS NO.0 KEY
963.05	964.40	1.35	2L 35 PRESS NO.0 KEY
964.40	966.20	1.80	2L 74 LINE SELECT MACEY/ 18000 FROM SCRATCH PAD TO [THEN] PROMPT
966.20	968.00	1.80	2L 75 LINE SELECT MACEY TO SCRATCH PAD FROM [RTE LEGS] PAGE
968.00	970.00	2.00	2L 76 PRESS [HOLD] KEY
970.00	971.80	1.80	2L 77 LINE SELECT MACEY FROM SCRATCH PAD TO [HOLD AT] PROMPT
971.80	973.15	1.35	2L 42 PRESS F/F-L KEY
973.15	974.50	1.35	2L 48 PRESS L KEY
974.50	975.85	1.35	2L 28 PRESS NO.1 KEY
975.85	977.20	1.35	2L 33 PRESS NO.8 KEY
977.20	978.55	1.35	2L 36 PRESS NO.0 KEY
978.55	980.35	1.80	2L 78 LINE SELECT FL190 FROM SCRATCH PAD TO [TST ALT] PROMPT.
980.35	981.70	1.35	2L 28 PRESS NO.1 KEY
981.70	983.05	1.35	2L 27 PRESS NO.2 KEY
983.05	984.40	1.35	2L 28 PRESS NO.3 KEY
984.40	985.75	1.35	2L 29 PRESS NO.4 KEY
985.75	987.55	1.80	2L 79 LINE SELECT 1234 FROM SCRATCH PAD TO [EFC TIME] PROMPT.
987.55	992.55	5.00	2K 59 MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
992.55	993.90	1.35	2L 21 PRESS EXEC KEY
993.90	995.90	2.00	2K 60 MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
995.90			140003 ALTITUDE CHANGE PROC
996.00			140003 ALTITUDE CHANGE PROC
997.00			140003 ALTITUDE CHANGE PROC
998.00			140003 ALTITUDE CHANGE PROC
999.00			140003 ALTITUDE CHANGE PROC
1000.00			140003 ALTITUDE CHANGE PROC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME
845.00		
845.00	846.00	1.00
847.00	847.60	0.60
847.60	848.00	0.40
848.00	849.00	1.00
850.00	850.70	0.70
851.00	852.30	1.30
852.50	853.50	1.00
854.50	855.20	0.70
855.20	856.20	1.00
856.20	857.20	1.00
858.20	859.60	0.40
858.60	859.70	1.10
861.10	862.20	1.10
861.10	862.20	1.10
860.00		
865.00		
865.00	875.00	10.00
865.00		
866.00	866.60	1.60
866.60	869.60	2.00
868.60	870.40	1.80

# EVENT/PROCEDURE TASK

160062	LANDING CHECKLIST
88090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P160076	CALL OUT -[RECALL]
1P160077	CALL OUT -[CHECKED]
88090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P160078	CALL OUT -[SPEED BRAKES]
1P 02	MONITOR CALL-OUT
88090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P160080	CALL OUT -[LANDING GEAR]
1P160081	CALL OUT -[DOWN, THREE GREEN]
88090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
1P160082	CALL OUT -[FLAPS]
1P160083	CALL OUT -[FIFTEEN GREEN LIGHT]
1P160084	CALL OUT -[CHECKLIST COMPLETE]
1P 12	MONITOR CALL-OUT
160071	FLIGHT INSTRUMENT SCAN -A2, PILOT
00EY02	C/P EXT VIS SCAN
8A 10	PILOT EXTERNAL VISION SCAN
16DL62	WINDSHEAR WARNING (FROM DC-9 AHEAD)
1D16XX01	MON INFORMATION MANAGEMENT ATENSON
1D16XX09	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] RED
1X160001	LINE SELECT [ATC UPLINKS PENDING]

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
070.40	078.40	8.00	1D16XX02 READ-XXXX Z,DC-8 REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L,MAX THRUST REQ-D
078.40	080.20	1.80	1X180045 LINE SELECT [ ACKNOWLEDGE ]
080.00			16YL01 INITIATE 80-AROUND
080.00	083.20	3.20	1P 15 MONITOR CALL-OUT
082.00			16FB06 COPILOT GOAROUND ACTIVITIES
082.00	082.77	0.77	3H 02 MON CORR BARO ALT INDIC
082.00	082.76	0.76	7F 27 MON ENG NO 1 EPR BUG
082.00	082.76	0.76	7F 28 MON ENG NO 2 EPR BUG
082.00	082.00	10.00	3A 10 MONITOR AIRSPEED INDIC
082.00	082.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
083.40	085.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
085.40	086.40	1.00	1P16FB04 CALL-OUT (FLAPS 15)
087.40	090.46	3.06	4D 01 SET LHDB GEAR LVR TO UP POSITION
087.40	087.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
087.40	087.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
090.46	093.19	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
093.15	094.55	1.40	1P16FB05 CALL-OUT (BUG + 15)
097.80	098.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
097.80	098.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF
097.80	099.80	2.00	1P16FB06 CALL-OUT (GEAR UP, OFF)
092.00			16YL01 MISSED APPROACH CALL AND REQUEST FOR HOLDING
092.00	093.80	1.80	1X180002 LINE SELECT [REQUEST FOR CLEARANCE]
093.80	095.80	1.80	1X180018 LINE SELECT [MAKING MISSED APPROACH]
095.80	096.80	1.20	1X180031 PRESS KEY [1]
096.80	098.00	1.20	1X180044 PRESS [ENT]
098.00	099.20	1.20	1X180035 PRESS KEY [5]
099.20	099.40	1.20	1X180044 PRESS [ENT]
099.40	092.20	1.80	1X180023 LINE SELECT [ENTER HOLDING FOR XX MIN]
097.00	098.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATTENTION
098.60	099.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PROG] AMBER
098.80	098.40	1.80	1X180001 LINE SELECT [ATC UPLINKS PENDING]
098.40	098.40	10.00	1D16XL01 READ-CLRD TO MACEY INT,TURN LT HDB 080, INTCPT AND PROCEED VIA AMN R-322,CLIMB
098.40	046.40	10.00	1D16XL02 AND MAINTAIN FL180, HOLD NE OF MACEY AS PUBLND, EFC XXXX Z.
046.40	050.20	1.80	1X180041 LINE SELECT [WILCO]
053.00			140003 ALTITUDE CHANGE PROC
053.00			140003 ALTITUDE CHANGE PROC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
099.00			18FB07 P/CP GOAROUND COMMUNICATIONS
099.00	003.50	4.50	1P 10 MONITOR CALL OUT
099.00			18FB08 CP FLAP SET AND CALLOUTS
099.00	001.69	2.69	4E 09 SET FLAP CONT LEVER TO FLAPS 8
001.69	003.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
003.92	004.72	0.80	1P18FB11 CALL-OUT (FLAPS 5)
004.08	006.81	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
006.81	008.83	2.02	7F 25 MON ENG NO 1 EPR IND
006.81	008.83	2.02	7F 30 MON ENG NO 2 EPR IND
008.89	015.89	7.00	3H 08 MON ALTIMETER
015.89	016.69	0.80	1P18FB12 CALL-OUT (3000)
009.89	010.59	0.70	1P 07 MONITOR REPORT
011.00	013.69	2.69	4E 07 SET FLAP CONT LEVER TO FLAPS 1
014.00	016.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
016.50	017.20	0.70	1P180058 CALL OUT -[FLAPS 1]
017.50	019.52	2.02	7F 25 MON ENG NO 1 EPR IND
017.50	019.52	2.02	7F 30 MON ENG NO 2 EPR IND
020.00	020.70	0.70	1P 07 MONITOR REPORT
021.00	022.98	1.98	4E 08 SET FLAP CONT LEVER TO FLAPS 0
023.00	025.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
025.50	026.20	0.70	1P18FB29 CALL OUT [FLAPS UP]
003.00			140003 ALTITUDE CHANGE PROC
013.00			140003 ALTITUDE CHANGE PROC
023.00			140003 ALTITUDE CHANGE PROC
040.00			140003 ALTITUDE CHANGE PROC
060.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
060.00	070.00	10.00	2K 14 MON MAP VIDEO
060.00	070.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
060.00	070.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
060.00	070.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
060.00	070.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
060.00	070.00	10.00	2J 01 MON ROLL ATT INDIC
060.00	070.00	10.00	2J 19 MON PITCH REF INDIC
060.00	070.00	10.00	3A 10 MONITOR AIRSPEED INDIC
070.00			090048 FLIGHT INSTRUMENT SCAN -A2
070.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
070.00	080.00	10.00	2K 14 MON MAP VIDEO
070.00	080.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
070.00	080.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
070.00	080.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
070.00	080.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
070.00	080.00	10.00	2J 01 MON ROLL ATT INDIC

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
970.00	980.00	10.00	2J 18 MON PITCH REF INDIC
970.00	980.00	10.00	3A 10 MONITOR AIRSPEED INDIC
980.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
980.00	990.00	10.00	2K 14 MON MAP VIDEO
980.00	990.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
980.00	990.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
980.00	990.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
980.00	990.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
980.00	990.00	10.00	2J 01 MON ROLL ATT INDIC
980.00	990.00	10.00	2J 19 MON PITCH REF INDIC
980.00	990.00	10.00	3A 10 MONITOR AIRSPEED INDIC
980.00			180073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
980.00	1000.00	10.00	2K 14 MON MAP VIDEO
980.00	1000.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
980.00	1000.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
980.00	1000.00	10.00	2J 05 MON FLT PATH ANGLE INDIC
980.00	1000.00	10.00	2J 04 MON FLT PATH ACCEL INDIC
980.00	1000.00	10.00	2J 01 MON ROLL ATT INDIC
980.00	1000.00	10.00	2J 19 MON PITCH REF INDIC
980.00	1000.00	10.00	3A 10 MONITOR AIRSPEED INDIC

**B.13 TCAS ENCOUNTER—CONVENTIONAL FLIGHT DECK**

**Flying Pilot**

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**B207**



SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
198.00			180091 HANDOFF TO AT - FINAL APPROACH CONT. ALER
195.00	207.00	12.00	1P18XX91 N 815, TURN RT HDG 270 DESCND AND MAINTAIN 8000 FT. CONTACT ATL APPR ON 127.25.
200.00			140007 HEADING CHANGE PROC.
200.00	210.00	10.00	38 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L 02 MON VERTICAL SPEED INDIC
200.00	204.92	4.92	38 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
205.00	215.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			18BL02 BEGIN TURN TO DOWN- WIND LEG
210.00			18BL03 DESCEND THRU 11000.
215.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHAR AT 8000 FT.
215.00	217.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A 84 MANUALLY CONTROL A/C
219.00			180092 TUNE ATL APPROACH ON 127.25
228.00			180093 CONTACT ATL APPROACH ON 127.25
231.00	235.00	4.00	1P18TY90 NASA 815, ATL APPR, ROGER.
220.00			090003 FLIGHT INSTRUMENT SCAN - A

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
220.00	230.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
220.00	230.00	10.00	3L 02 MON VERTICAL SPEED INDIC
220.00	230.00	10.00	3A 10 MONITOR AIRSPEED INDIC
220.00	230.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
230.00			090003 FLIGHT INSTRUMENT SCAN - A
230.00	240.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
230.00	240.00	10.00	3L 02 MON VERTICAL SPEED INDIC
230.00	240.00	10.00	3A 10 MONITOR AIRSPEED INDIC
230.00	240.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			10TC01 TCAS ENCOUNTER
240.00	241.00	1.00	1D10XX10 MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00	1.00	1D10XX03 MON MASTER CAUTION VISUAL ALERT-AMBER
241.00	243.00	1.40	1TC00001 MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	255.00	11.00	1TC00003 PILOT VISUAL SEARCH FOR TRAFFIC
244.00	255.00	11.00	1TC00015 MONITOR TRAFFIC DISPLAY
244.00	247.00	3.00	1TC00017 MON CALL OUT-[TRAF- FIC AT 1 O-CLOCK, 1200 FEET BELOW, AND CLIMBING]
252.00	255.00	3.00	1TC00023 MON CALL OUT-[TRAF- FIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D10XX04 MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D10XX05 MON MASTER WARNING VISUAL ALERT - RED
255.00	257.50	1.70	1TC00006 RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB, CLIMB, CLIMB]
255.00	263.40	7.00	1TC00021 PILOT EVALUATES SITUATION AND DECIDES TO RESPOND TO R. A.
255.00	275.00	20.00	1TC00007 MON TIME CRITICAL VISUAL ALERT DISPLAY [YSI RED EYEBROWS] CLIMB INDICATION
259.00	263.00	4.00	1TC00015 MONITOR TRAFFIC DISPLAY
259.00	262.00	3.00	1TC00025 MON CALL OUT-[TRAF- FIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
262.40	263.40	1.00	3R 04 PRESS AUTOPILOT DISENGAGE SWITCH ON CONTROL WHEEL
263.00	268.00	5.00	3A 10 PILOT EXTERNAL VISION SCAN
263.00	268.00	5.00	3A 10 PILOT EXTERNAL VISION SCAN
263.40	263.40	20.00	4A 29 ACT FLT CONTROL TO CHANGE ALT

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SINCE MISSION START BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
283.40	286.22	2.82	4B 03 ACTUATE BOTH THROTTLES
285.00	289.00	4.00	1TC00028 CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
285.90	286.34	0.44	7F 25 MON ENG NO 1 EPR IND
285.90	286.34	0.44	7F 30 MON ENG NO 2 EPR IND
288.90	273.90	5.00	8A 10 PILOT EXTERNAL VISION SCAN
288.90	273.90	5.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00	273.00	3.00	1TC00029 MON CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
273.00	277.40	2.40	1TC00018 MON CALL OUT [CLEAR OF CONFLICT ING TRAFFIC]
275.00	280.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
279.00	289.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
279.00	289.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
277.00	279.82	2.82	4B 03 ACTUATE BOTH THROTTLES
277.00	279.05	2.05	3R 10 MON PITCH ATTITUDE INDIC ON FDI
279.00	279.44	0.44	7F 25 MON ENG NO 1 EPR IND
279.00	279.44	0.44	7F 30 MON ENG NO 2 EPR IND
280.00	282.03	2.03	3L 01 MON VERTICAL SPEED INDIC
283.40	298.40	15.00	4A 20 ACT FLT CONTROL TO CHANGE ALT
288.00	295.00	7.00	1TC00020 [ROGER 515,RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
298.00			18TC02 RE-ENGAGE AUTOPILOT PITCH AND ROLL CHANNELS IN MAN CWS
298.00	300.00	2.00	3R 85 ACTUATE AUTOPILOT PITCH AND ROLL CHANNEL SWITCHES
295.00			00EV09 C/P EXT VIS SCAN
310.00			090019 FLIGHT INSTRUMENT SCAN - D
310.00	370.00	60.00	3R 58 MON PITCH ATTITUDE INDIC ON FDI
310.00	370.00	60.00	3L 02 MON VERTICAL SPEED INDIC
310.00	370.00	60.00	3A 10 MONITOR AIRSPEED INDIC
310.00	370.00	60.00	3S 15 MONITOR A/C HEADING RELATIVE TO SELECTED

**B.14 TCAS ENCOUNTER—CONVENTIONAL FLIGHT DECK**

**Nonflying Pilot**

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**B213**

SINCE MISSION START		ACTIVITY TIME	EVENT/PROCEDURE TASK
BEGINNING	END		
195.00			180091 HANDOFF TO ATL' FINAL APPROACH CONT. .ER
195.00	207.00	12.00	1P18XX91 N 515, TURN RT HDG 270 DESCEND AND MAINTAIN 8000 FT, CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH- TO-TALK SW
207.00	214.00	7.00	1P18YY91 515, ROGER, HDG 270, MAINTAIN 8000, APPR ON 127.25.
200.00			140007 HEADING CHANGE PROC.
200.00			18BL02 BEGIN TURN TO DOWN- WIND LEG
210.00			18BL03 DESCEND THRU 11000.
215.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
219.00			180092 TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ- WHOLE NO.8
221.88	223.88	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
228.00			180093 CONTACT ATL APPROACH ON 127.25
228.00	227.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
228.40	231.90	3.50	1A 10 ACT PUSH-TO-TALK SW
228.40	231.90	3.50	1P18XX93 ATL APPR, NASA 515 DESCENDING TO 8000.
231.90	235.90	4.00	1P18YY90 NASA 515, ATL APPR. ROGER.

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME
220.00		
230.00		
240.00		
240.00	241.60	1.60
240.00	241.00	1.00
240.00	296.00	56.00
241.60	243.00	1.40
241.60	243.00	1.40
244.00	247.00	3.00
244.00	255.00	11.00
252.00	255.00	3.00
255.00	255.75	0.75
255.00	256.00	1.00
255.80	257.50	1.70
255.00	275.00	20.00
257.50	258.90	1.40
259.00	262.00	3.00
259.00	275.00	16.00
265.00	269.00	4.00
270.00	273.00	3.00
278.00	288.00	10.00
275.00	277.40	2.40
277.00	277.77	0.77
288.00	296.00	7.00
299.00		
298.00		
295.00	340.00	45.00

EVENT/PROCEDURE TASK
090003 FLIGHT INSTRUMENT SCAN - A
090003 FLIGHT INSTRUMENT SCAN - A
16TC01 TCAS ENCOUNTER
1D16XX10 MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
1D16XX03 MON MASTER CAUTION VISUAL ALERT-AMBER
8A 12 PILOT EXTERNAL VISION SCAN
1TC00018 PRESS MASTER CAUTION SWITCH
1TC00001 MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
1TC00002 CALL OUT-[TRAFFIC AT 1 O-CLOCK, 1200 FT BELOW, AND CLIMBING]
1TC00004 MONITOR TCAS TRAFFIC DISPLAY
1TC00022 CALL OUT-[TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
1D16XX04 MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
1D16XX06 MON MASTER WARNING VISUAL ALERT - RED
1TC00006 RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB, CLIMB, CLIMB]
1TC00007 MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
1TC00019 PRESS MASTER WARNING SWITCH
1TC00024 CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
1TC00004 MONITOR TCAS TRAFFIC DISPLAY
1TC00027 MON CALL OUT-[OK, WE ARE CLIMBING. KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
1TC00028 CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
1TC00009 CALL ATC, [ATL APPR. NASA 515 LEVEL AT 10,000 DUE TO TCAS RA, PLEASE ADVISE]
1TC00011 CALL OUT - [CLEAR OF CONFLICTING TRAFFIC]
3H 02 MON CORR BARO ALT INDIC
1TC00020 [CROGER 515 RADAR SHOWS NEGATIVE TRAF FIC. CONTINUE DESCENT AS CLEARED.]
16TC02 RE-ENGAGE AUTOPILOT PITCH AND ROLL CHANNELS IN MAN CWS
00EV09 C/P EXT VIS SCAN
8A 12 PILOT EXTERNAL VISION SCAN

## **B.15 TCAS ENCOUNTER—ADVANCED FLIGHT DECK**

**Flying Pilot**

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
195.00			180091 HANDOFF TO AT FINAL APPROACH CON: LER
195.00	207.00	12.00	1P18XX01 N 515, TURN RT HDQ270 DESCEND AND MAINTAIN 8000 FT. CONTACT ATL APPR ON 127.25.
200.00			180081 ENTER/ARM NEW ALT IN MCP
200.00	202.47	2.47	2H 33 ROTATE ALT ENG KNOB
200.00	200.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
201.40	202.48	1.08	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
202.60	203.92	1.42	2H 28 PRESS ALT ENG MODE S SW
203.90	204.68	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00			16BL02 BEGIN TURN TO DOWN- WIND LEG
205.00			180082 ENTER NEW HEADNG IN MCP
205.00	207.50	2.50	2H 19 ROTATE TKA SEL KNOB
205.00	208.11	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
207.50	208.27	0.77	2H 18 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO
210.00	220.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
219.00			180092 TUNE ATL APPROACH ON 127.25
228.00			180093 CONTACT ATL APPROACH ON 127.25
231.90	235.90	4.00	1P18TY90 NASA 515, ATL APPR. ROGER.
220.00			090051 FLIGHT INSTRUMENT SCAN -A1
220.00	230.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
220.00	230.00	10.00	3L 02 MON VERTICAL SPEED INDIC
220.00	230.00	10.00	3A 10 MONITOR AIRSPEED INDIC
220.00	230.00	10.00	2K 14 MON MAP VIDEO
220.00	230.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
220.00	230.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
230.00			090051 FLIGHT INSTRUMENT SCAN -A1
230.00	240.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
230.00	240.00	10.00	3L 02 MON VERTICAL SPEED INDIC
230.00	240.00	10.00	3A 10 MONITOR AIRSPEED INDIC
230.00	240.00	10.00	2K 14 MON MAP VIDEO
230.00	240.00	10.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
230.00	240.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

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B219



SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
240.00			18TC01 TCAS ENCOUNTER
240.00	241.60	1.60	1D18XX10 MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00	1.00	1D18XX03 MON MASTER CAUTION VISUAL ALERT-AMBER
241.60	243.00	1.40	1TC00001 MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	255.00	11.00	1TC00003 PILOT VISUAL SEARCH FOR TRAFFIC
244.00	255.00	11.00	1TC00015 MONITOR TRAFFIC DISPLAY
244.00	247.00	3.00	1TC00017 MON CALL OUT-[TRAF- FIC AT 1 O-CLOCK, 1200 FEET BELOW, AND CLIMBING]
252.00	255.00	3.00	1TC00023 MON CALL OUT-[TRAF- FIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D18XX04 MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D18XX05 MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006 RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB, CLIMB, CLIMB]
255.80	263.40	7.60	1TC00021 PILOT EVALUATES SITUATION AND DECIDES TO RESPOND TO R. A.
255.00	275.00	20.00	1TC00007 MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
259.00	263.00	4.00	1TC00015 MONITOR TRAFFIC DISPLAY
259.00	262.00	3.00	1TC00025 MON CALL OUT-[TRAF- FIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
262.40	263.40	1.00	3R 04 PRESS AUTOPILOT DISENGAGE SWITCH ON CONTROL WHEEL
263.00	266.00	3.00	8A 10 PILOT EXTERNAL VISION SCAN
263.00	266.00	3.00	8A 10 PILOT EXTERNAL VISION SCAN
263.40	263.40	20.00	4A 29 ACT FLT CONTROL TO CHANGE ALT
263.40	266.22	2.82	4B 03 ACTUATE BOTH THROTTLES
265.00	269.00	4.00	1TC00028 CALL OUT-[OK, WE ARE CLIMBING. KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
265.90	266.34	0.44	7F 25 MON ENG NO 1 EPR IND
265.90	266.34	0.44	7F 30 MON ENG NO 2 EPR IND
266.90	273.90	6.00	8A 10 PILOT EXTERNAL VISION SCAN
266.90	273.90	6.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00	273.00	3.00	1TC00029 MON CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
275.00	277.40	2.40	1TC00016 MON CALL OUT [CLEAR OF CONFLICT ING TRAFFIC]
275.00	280.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
279.00	298.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
279.00	299.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN
277.00	279.82	2.82	4B 03 ACTUATE BOTH THROTTLES
277.00	279.03	2.03	3R 10 MON PITCH ATTITUDE INDIC ON FDI
279.00	279.44	0.44	7F 25 MON ENG NO 1 EPR IND
279.00	279.44	0.44	7F 30 MON ENG NO 2 EPR IND
280.00	282.03	2.03	3L 01 MON VERTICAL SPEED INDIC
283.40	298.40	15.00	4A 20 ACT FLT CONTROL TO CHANGE ALT
288.00	295.00	7.00	1TC00020 [ROGER 518, RADAR SHOWS NEGATIVE TRAF PIC. CONTINUE DESCENT AS CLEARED.
298.00			18TC02 RE-ENGAGE AUTOPILOT IN PREVIOUSLY SELEC- TED AUTO-FLIGHT MODES (FPA, TKA, CAS)
298.00	299.42	1.42	2H 07 PRESS AUTO MODE SW
299.40	300.17	0.77	2H 13 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
299.40	300.17	0.77	2H 22 MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
300.20	302.85	2.65	2H 28 ROTATE FPA SEL KNOB
300.20	300.87	0.77	2H 24 MONITOR FPA SEL MODE LT BLUE - FPA SEL MODE PRESELECTED
301.80	302.88	1.08	2H 27 READ FPA SEL VALUE ON DIGITAL INDIC
302.70	304.70	2.00	2K 32 MON ALT/RNG SYMBOLS
304.70	308.10	1.40	2H 21 PRESS FPA SEL MODE SW
308.10	308.87	0.77	2H 22 MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
310.00			090048 FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L 02 MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A 10 MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K 14 MON MAP VIDEO
310.00	340.00	30.00	2K 48 MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K 33 MON CURVED TREND

## **B.16 TCAS ENCOUNTER—ADVANCED FLIGHT DECK**

**Nonflying Pilot**

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME
195.00		
195.00	207.00	12.00
207.00	214.00	7.00
207.00	214.00	7.00
200.00		
200.00		
205.00		
210.00		
210.00		
219.00		
219.00	223.88	4.88
219.00	221.90	2.90
221.88	223.88	1.98
226.00		
226.00	227.49	1.49
226.40	231.90	5.50
226.40	231.90	5.50
231.90	235.90	4.00
220.00		
230.00		
240.00		
240.00	241.60	1.60
240.00	241.00	1.00
240.00	295.00	55.00
241.80	243.00	1.40
241.80	243.00	1.40
244.00	247.00	3.00
244.00	255.00	11.00
252.00	255.00	3.00
255.00	255.75	0.75
255.00	256.00	1.00
255.80	257.50	1.70
255.00	275.00	20.00

EVENT/PROCEDURE TASK
100081 HANDOFF TO AT FINAL APPROACH CONTROLLER
1P18XX91 N 515, TURN RT HDQ 270 DESCEND AND MAINTAIN 6000 FT. CONTACT ATL APPR ON 127.25.
1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
1P18YY91 515, ROGER, HDQ 270, MAINTAIN 6000, APPR ON 127.25.
100081 ENTER/ARM NEW ALT IN MCP
108L02 BEGIN TURN TO DOWN-WIND LEG
100082 ENTER NEW HEADNG IN MCP
108L03 DESCEND THRU 11000.
090081 FLIGHT INSTRUMENT SCAN -A1
100092 TUNE ATL APPROACH ON 127.25
1B 01 MON VHF-2L FREQ IND
1B 02 SET VHF-2L FREQ-WHOLE NO.8
1B 03 SET VHF-2L FREQ - FRACTIONS
100093 CONTACT ATL APPROACH ON 127.25
1B 05 SET VHF-2 COMM TFR SW TO LEFT
1A 10 ACT PUSH-TO-TALK SW
1P18XX93 ATL APPR, NASA 515 DESCENDING TO 6000.
1P18YY90 NASA 515, ATL APPR, ROGER.
090081 FLIGHT INSTRUMENT SCAN -A1
090081 FLIGHT INSTRUMENT SCAN -A1
10TC01 TCAS ENCOUNTER
1D18XX10 MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
1D18XX03 MON MASTER CAUTION VISUAL ALERT-AMBER
8A 12 PILOT EXTERNAL VISION SCAN
1TC00018 PRESS MASTER CAUTION SWITCH
1TC00001 MON VISUAL ALERT DISPLAY - AMBER (TCAS ALERT)
1TC00002 CALL OUT-(TRAFFIC AT 1 O-CLOCK, 1200 FT BELOW, AND CLIMBING)
1TC00004 MONITOR TCAS TRAFFIC DISPLAY
1TC00022 CALL OUT-(TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING)
1D18XX04 MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
1D18XX05 MON MASTER WARNING VISUAL ALERT - RED
1TC00008 RESOLUTION ADVISORY VOICE ALERT. (TCAS CLIMB, CLIMB, CLIMB)
1TC00007 MON TIME CRITICAL VISUAL ALERT DISPLAY (EYES RED EYEBROWS) CLIMB INDICATION

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
257.50	258.90	1.40	1TC00018 PRESS MASTER WARNING SWITCH
259.00	262.00	3.00	1TC00024 CALL OUT-(TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING)
269.00	275.00	16.00	1TC00004 MONITOR TCAS TRAFFIC DISPLAY
265.00	269.00	4.00	1TC00027 MON CALL OUT-(OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.)
270.00	273.00	3.00	1TC00026 CALL OUT-(OK, HE IS STILL AT 700 FEET BELOW US)
276.00	288.00	10.00	1TC00009 CALL ATC, [ATL APPR, WASA 515 LEVEL AT 10,000 DUE TO TCAS RA, PLEASE ADVISE]
275.00	277.40	2.40	1TC00011 CALL OUT - [CLEAR OF CONFLICTING TRAFFIC]
277.00	277.77	0.77	3M 02 MON CORR BARO ALT INDIC
286.00	296.00	7.00	1TC00020 [ROGER 515 RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
296.00			18TC02 RE-ENGAGE AUTOPILOT IN PREVIOUSLY SELEC- TED AUTO-FLIGHT MODES (FPA,TKA,CAS)
310.00			000048 FLIGHT INSTRUMENT SCAN -A2
340.00			000048 FLIGHT INSTRUMENT SCAN -A2
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL

**APPENDIX C**  
**TIMELINE ANALYSIS DETAILED RESULTS**

## APPENDIX C

Results are presented for all the scenarios in terms of histograms defining the time history of relevant activity channels, as well as summary tables to aid in comparative analysis.

The summary tables are shown in Tables C-1 through C-16, and describe the average tasking for all activity channels for each crew member and scenario. The tasking is in terms of percent channel utilization and is averaged over the entire scenario. The averages for VHF voice and data link scenarios are shown, and then the relative impacts due to data link are indicated. Note that a percent increase is additive in these comparisons. These summary tables are placed at the end of this appendix.

The histograms are illustrated in Figures C-1 through C-92, and are also placed at the end of this appendix. The horizontal time axis in these figures correlates with the time reference in Appendix B for the detailed mission scenarios, so that significant tasking impacts can be correlated with the corresponding scenario events.

### C.1 NORMAL ILS APPROACH

#### C.1.1 Conventional Flight Deck Crew Tasking

This section presents TLA results for both crew members in a conventional flight deck operating in both a current NAS and a data link environment.

Significant results are that the nonflying pilot (copilot in the right seat) crew tasking is more substantially affected by data link implementation than is the flying pilot (pilot in the left seat).

Data link increases in internal vision are 9% greater for copilot than pilot. Data link decreases in auditory tasking are 5% greater for copilot than pilot. Other channel variations combine to produce negligible changes in the overall weighted average tasking for both pilot and copilot.

##### C.1.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision and auditory channels. As seen in Table C-1, the 1.55% increase in internal vision is largely balanced by the 1.90% decrease in auditory tasking. As a result, the weighted channel average tasking is not significantly affected. To gain insight into why increases and decreases have occurred, channel tasking is analyzed as a function of scenario elapsed time, allowing correlation with specific procedures and tasks. The cognitive channel is also investigated to see if any effects are masked by the averaging process in Table C-1.

##### C.1.1.1.1 Internal Vision Channel

Figure C-1 indicates internal vision channel task loading for both current NAS and data link environments. As shown, the use of data link results in tasking increases during the following key scenario events.

1. ATC vector to downwind heading
2. ATC altitude stepdown clearance
3. Monitor ATIS

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4. ATC vector to base heading
5. ATC ILS approach clearance
6. Handoff to ATL tower and landing clearance
7. Handoff to ATL ground control
8. Taxi clearance

The time for these events can be used to identify specific procedures causing the channel increases. The detailed mission scenario, Appendix B, indicates that task 1D16XX02 is the cause of each channel increase. This task is labeled "Monitor Communication Management Display [Mode-S Uplink Pending] Amber."

#### **C.1.1.1.2 Cognitive Channel**

Figure C-2 compares cognitive channel tasking for current NAS and data link concepts. Key scenario events and their effects are as follows.

9. Handoff from ATL center—slight decrease
10. Handoff to ATL final approach—slight decrease
11. Monitor ATIS—decrease
12. Landing clearance—slight increase
13. Taxi clearance—slight increase

It can be seen by reference to the detailed mission scenario that the slight tasking decreases are due to the pilot not having to monitor ATC audio with the data link concept. Similarly, the slight tasking increases are due to pilot monitoring of the communication management display annunciating "UP-LINK PENDING" as in the previous internal vision channel tasking discussion. The somewhat greater tasking decrease is due to the pilot not having to listen to the ATIS audio with the data link concept.

#### **C.1.1.1.3 Auditory Channel**

Pilot auditory channel tasking is impacted the most by data link implementation, as shown by Figure C-3. As could be expected, the largest tasking decrease is due to the ATIS monitoring scenario event. The data link concept eliminates approximately 30 sec of audio monitoring. This tasking decrease is predicated on an assumption that the copilot deemed it unnecessary to relay any information to the pilot, an assumption that would certainly not always be correct.

The handoff from ATL center correlates with a tasking decrease due to the nature of a data link handoff requiring only the copilot to select the new VHF comm frequency for monitoring. The other tasking effects are largely due to shifting the pilot auditory monitoring from listening to ATC on the VHF radio to listening to the copilot read out loud the uplink as he reads it on the CDU.



#### **C.1.1.1.4 Weighted Channel Average**

Figure C-4 illustrates the combined effect of the individual channel tasking variations due to data link implementation. Scenario events associated with ATC handoffs correlate with slight tasking decreases, while events associated with ATC clearances correlate with slight tasking increases. The ATIS monitoring event correlates with a more significant tasking decrease.

#### **C.1.1.2 Nonflying Pilot**

The nonflying pilot (copilot) tasking is more extensively impacted by data link implementation than is the flying pilot tasking. Table C-2 shows a 1.94% decrease in external vision, a 10.57% increase in internal vision, a 3.49% increase in left hand, a 4.79% decrease in right hand, a 0.06% increase in cognitive, a 7.34% decrease in auditory, a 1.08% increase in verbal, and a 0.53% increase in weighted channel average values of activity.

##### **C.1.1.2.1 External Vision**

Figure C-5 indicates external vision channel task loading for both current NAS and data link environments. The use of data link results in a tasking decrease during the ATIS monitoring event. This decrease results from the requirement to not exceed 100% total vision (internal + external) during a time when the internal vision channel is heavily loaded. Normally, a reduction in task loading is considered advantageous. In this case, however, an outside visual scan is an important monitoring task and a reduction in scan would be undesirable. It should be noted, however, that due to programming limitations the amount of external vision tasking reduction is probably unrealistically high. Another slight tasking decrease occurs during the taxi clearance scenario event. This coincides with an internal vision tasking increase due to the copilot reading the uplinked taxi clearance.

##### **C.1.1.2.2 Internal Vision**

Figure C-6 indicates internal vision channel loading for current NAS and data link environments. Significant tasking increases occur during all but the first of the key scenario events. The highest tasking increase is correlated with the ATC ILS approach clearance event. This is due to the longer and more complicated uplink message requiring more time for the copilot to read. The ATIS and landing clearance events, which require reading lengthy messages, also correlate with large tasking increases.

##### **C.1.1.2.3 Left Hand**

Figure C-7 shows the increased left hand channel loading due to data link implementation. A tasking increase is indicated for every scenario key event. The detailed mission scenario shows two copilot left hand channel interactions for each data link transaction; initially to select the pending uplink (Task 1X160001) for display, and then to send the confirming downlink (Task 1X160041). The two highest tasking increases occur during handoff events to ATL approach and to ATL ground control. These events are distinguished from the other key scenario events in that the left hand channel is utilized to select a new frequency on the VHF comm radio panel, in addition to the other data link tasks.

##### **C.1.1.2.4 Right Hand**

Figure C-8 indicates the tasking effects due to data link implementation. Right hand tasking is decreased during all the key scenario events except the ATIS event which does not involve that channel. The right hand channel is utilized in VHF voice communications to key the microphone using the control wheel push-to-talk switch while transmitting. The data link concept eliminates the need for this

task, producing the tasking decreases. Note that if the pilot (sitting in the left seat) were handling communications, this tasking decrease would be applied to the left hand channel.

#### **C.1.1.2.5 Cognitive**

Figure C-9 illustrates the cognitive channel loading effects due to data link implementation. The tasking is decreased for the scenario events involving ATC handoffs, since there is no requirement to call the new ATC facility using data link. Tasking is increased during ATC clearance events, reflecting the procedure where the copilot reads the uplink message out loud to the pilot.

#### **C.1.1.2.6 Auditory**

Figure C-10 shows the expected data link effect of significant auditory tasking decreases during all the key scenario events. The ATIS and ILS approach clearance events correlate with the highest tasking decreases since the ATC messages are the longest.

#### **C.1.1.2.7 Verbal**

Figure C-11 indicates an unexpected verbal tasking effect of data link implementation. The ATC vector, ILS approach clearance, landing clearance, and taxi clearance events correlate with verbal tasking increases. Examination of the detailed mission scenario reveals that the copilot is spending more time reading the uplink message out loud to the pilot than he saves by not having to read back the clearance to ATC on the VHF radio. This is particularly evident during the ILS approach clearance event. Tasking decreases are indicated during ATC handoffs, as expected.

#### **C.1.1.2.8 Weighted Channel Average**

Figure C-12 illustrates the combined effect of the individual channel tasking variations due to data link implementation. As was the case for the pilot, tasking decreases correlate with ATC handoffs and the ATIS scenario event. Tasking increases correlate with ATC clearances. Overall, the magnitude of the tasking increases and decreases is greater than that for the pilot tasking comparisons.

### **C.1.2 Advanced Flight Deck**

This section presents TLA results for both crew members in an advanced flight deck operating in both a current NAS and a data link environment.

It may be significant to note that results for the advanced flight deck closely parallel those for the conventional flight deck.

#### **C.1.2.1 Flying Pilot**

TLA results for the flying pilot in the advanced flight deck are similar to those for the conventional flight deck. Taking into account the overall tasking reductions due to increased automation in the advanced flight deck, the channel tasking impact due to data link implementation is very similar to the trends noted for the conventional flight deck. As listed in Table C-3, when averaged over the entire scenario, the only channels significantly affected by data link are internal vision and auditory. As shown, the 1.71% increase in internal vision tasking is largely balanced by the 1.91% decrease in auditory tasking, resulting in an insignificant change in the weighted channel average tasking.

#### **C.1.2.1.1 Internal Vision**

Figure C-13 indicates comparative internal vision task loading for current NAS and data link environments. The advanced flight deck results indicate tasking increases during the same key scenario events as in the conventional flight deck analysis. The detailed mission scenario indicates that the task "Monitor Information Management Display [Mode-S Uplink Pending] Amber" is the cause of each tasking increase. Note that Figure C-1 shows a peak tasking of 100% for the conventional flight deck, while Figure C-13 indicates an 80% tasking level during that same event. This event, "Handoff to ATL tower and landing clearance," coincides with crossing the outer marker and intercepting the glideslope. The lower task loading at this point in the advanced flight deck scenario is due to the advanced guidance and display technology utilized.

#### **C.1.2.1.2 Auditory**

Pilot auditory tasking in the advanced flight deck is affected by data link implementation in the same way that auditory tasking is affected in the conventional flight deck. As shown in Figure C-14, which is very similar to Figure C-3 for the conventional flight deck, the largest tasking decrease is due to the ATIS monitoring event. The ATL center handoff correlates with another tasking decrease, as in the case of the conventional flight deck.

#### **C.1.2.1.3 Weighted Channel Average**

Figure C-15 illustrates that the net effect on pilot tasking is similar to that for the conventional flight deck. ATC handoffs correlate with slight tasking decreases, while ATC clearances correlate with slight tasking increases. The ATIS scenario event correlates with a more significant tasking decrease.

#### **C.1.2.2 Nonflying Pilot**

Nonflying pilot (copilot) tasking effects in the advanced flight deck due to data link are very similar to the effects noted for the conventional flight deck. Table C-4 indicates a 1.94% decrease in external vision, a 10.57% increase in internal vision, a 3.49% increase in left hand, a 4.79% decrease in right hand, a 0.06% increase in cognitive, a 7.35% decrease in auditory, a 1.08% increase in verbal, and a 0.53% increase in weighted channel average values of activity.

##### **C.1.2.2.1 External Vision**

External vision tasking effects due to data link implementation are similar to those for the conventional flight deck, as shown in Figure C-16. The tasking reductions are slightly less than for the conventional flight deck, due to minor differences in the current NAS tasking.

##### **C.1.2.2.2 Internal Vision**

Figure C-17 shows that internal vision tasking effects are very similar to the conventional flight deck, except for the portion correlated with the handoff to ATL ground control and the taxi clearance. The advanced flight deck required a higher level of tasking during these events in the current NAS. This was due to copilot monitoring of the EADI and TV video during touchdown and rollout, while the AGCS performed an autoland. When combined with the increased loading due to the data link handoff to ATL ground and the taxi clearance, the internal vision channel reached a peak loading of approximately 130%.

#### **C.1.2.2.3 Left Hand**

Figure C-18 shows that the tasking for this channel is identical to those for the conventional flight deck. This is expected since the data link concept for the copilot operates in a manner independent of whether it is an advanced or conventional flight deck.

#### **C.1.2.2.4 Right Hand**

Figure C-19 indicates that the tasking effects due to data link are identical to those for the conventional flight deck, as in the case of left hand channel tasking.

#### **C.1.2.2.5 Cognitive**

Figure C-20 indicates that tasking effects are similar to those for the conventional flight deck.

#### **C.1.2.2.6 Auditory**

Figure C-21 shows tasking effects identical to those for the conventional flight deck.

#### **C.1.2.2.7 Verbal**

Figure C-22 shows tasking effects identical to those for the conventional flight deck.

#### **C.1.2.2.8 Weighted Channel Average**

Figure C-23 indicates tasking effects similar to those for the conventional flight deck.

### **C.2 ILS APPROACH WITH WEATHER DEVIATION**

#### **C.2.1 Conventional Flight Deck**

##### **C.2.1.1 Flying Pilot**

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision and auditory channels. As seen in Table C-5, the 1.75% increase in internal vision is balanced by the 1.94% decrease in auditory tasking. As a result, the weighted average tasking is not significantly affected. These results are similar to the normal ILS approach scenario.

##### **C.2.1.1.1 Internal Vision Channel**

The data link implementation had a slightly more adverse impact on internal vision when the overall mission complexity was increased with a weather deviation. As shown in Figure C-24, the key scenario event of requesting a new heading from ATC corresponds with a tasking increase due to data link. This is due to the communications management display monitoring task imposed by the data link system. Other internal vision tasking increases are similar to the normal ILS scenario.

##### **C.2.1.1.2 Auditory Channel**

Data link impact on auditory tasking, as shown in Figure C-25, is similar to that for the normal ILS scenario. The addition of the weather deviation tasks resulted in no net change in tasking decrease due

to data link, since the elimination of pilot monitoring of ATC is replaced with pilot monitoring of the copilot.

#### **C.2.1.1.3 Weighted Channel Average**

Figure C-26 indicates that the weighted channel increases (resulting from internal vision tasking increases) are largely balanced by the weighted channel decreases (resulting from the auditive tasking decreases).

#### **C.2.1.2 Nonflying Pilot**

The data link impact on copilot tasking in the weather deviation scenario is similar but more pronounced than that in the normal ILS scenario. Table C-6 lists the average values of channel tasking for the weather deviation scenario. Comparison with Table C-2 for the normal ILS approach shows that the increased mission complexity resulted in data link implementation more adversely affecting internal vision (approximately 3% greater increase), left hand (approximately 1.5% greater increase), and the weighted channel average (0.3% greater increase). Other channels were more favorably impacted by data link implementation due to increased mission complexity. The right hand average tasking decrease was 1.4% greater, while the average auditory tasking decrease was 1.2% greater in the weather deviation scenario.

##### **C.2.1.2.1 Internal Vision**

Figure C-27 indicates internal vision task loading for both current NAS and data link implementation. As shown, the task loading is identical to that of Figure C-6 for the normal ILS scenario except for the key scenario events associated with the weather deviation. A large increase in internal vision tasking is evident at that time, due to the copilot interacting with the CDU to read uplinks and send downlinks.

##### **C.2.1.2.2 Left Hand**

Figure C-28 indicates the left hand tasking increases due to data link implementation. Comparison with Figure C-7 indicates a slight tasking increase corresponding to the weather deviation event that does not appear in the normal ILS scenario. This is due to the extra CDU key pushes required to request a new heading around the weather.

##### **C.2.1.2.3 Right Hand**

Figure C-29 indicates the right hand tasking decreases due to data link. Comparison with Figure C-8 indicates that the extra ATC communications in the weather deviation scenario requiring right hand activity to key the microphone is eliminated by data link implementation.

##### **C.2.1.2.4 Cognitive**

Figure C-30 indicates data link impact on cognitive tasking. Slight tasking increases are balanced by slight tasking decreases during the weather deviation event.

##### **C.2.1.2.5 Auditory**

Figure C-31 indicates the auditory tasking decreases due to data link. The tasking reductions shown during the weather deviation event are similar to those for other ATC clearances.

#### **C.2.1.2.6 Verbal**

Figure C-32 indicates the verbal tasking decreases due to data link. The weather deviation corresponds with a slight tasking decrease as shown.

#### **C.2.1.2.7 Weighted Channel Average**

Figure C-33 indicates the weighted channel average tasking impact due to data link. The weather deviation corresponds with an initial tasking increase due to increased visual tasking, followed by a tasking decrease due to reduced auditive tasking. A minor net change to the weighted average tasking is the result.

### **C.2.2 Advanced Flight Deck**

#### **C.2.2.1 Flying Pilot**

Advanced flight deck pilot tasking channels impacted by data link implementation in the weather deviation scenario were similar to those impacts noted in the normal ILS scenario, with the addition of a cognitive tasking increase due to data link. When channel activity is averaged over the entire scenario, as shown in Table C-7, internal vision (3.5% increase) and cognitive (1.6% increase) tasking were increased due to data link. Auditory tasking was decreased by 1.95%. As a result, weighted channel average tasking increased by 0.8%.

##### **C.2.2.1.1 Internal Vision Channel**

Figure C-34 indicates comparative internal vision tasking for current NAS and data link environments in the ILS weather deviation scenario. As shown, the scenario events associated with the weather deviation correlate with a 40% overload of the internal vision channel in the data link implementation case. Study of the detailed mission scenario, Appendix B, indicates that the pilot tasks contributing to this overload are Task 090048—Flight Instrument Scan, Task 18DL81—Arm New DL MCP Altitude, and Task 18DL82—Engage data linked Heading in MCP. Comparison with the mission scenario for the current NAS indicates that the instrument scan task was replaced by a shorter instrument scan at an earlier time, helping to prevent the tasking overload in the current NAS scenario.

##### **C.2.2.1.2 Cognitive Channel**

Figure C-35 indicates comparative cognitive channel tasking. A tasking increase due to data link is evident during the weather deviation events. Review of the mission scenario indicates that this is due to the instrument scan coinciding with the heading and altitude select tasks on the mode control panel.

##### **C.2.2.1.3 Right Hand Channel**

Figure C-36 indicates comparative right hand tasking. A slight tasking decrease due to data link is shown during scenario events which correspond to pilot interaction with the mode control panel.

##### **C.2.2.1.4 Auditory**

Figure C-37 indicates auditory comparisons. As shown, the trend established in the normal ILS scenario is continued where the initial tasking decrease is compensated by a similar tasking increase, due to replacing pilot monitoring of ATC with pilot monitoring of the copilot.

#### **C.2.2.1.5 Weighted Channel Average**

Figure C-38 illustrates the comparative weighted channel average tasking for the weather deviation scenario. As shown, a significant tasking increase is indicated for the initial portion of the weather deviation.

#### **C.2.2.2 Nonflying Pilot**

Advanced flight deck copilot tasking channels were impacted by data link implementation in the weather deviation scenario in a manner very similar to that for the conventional flight deck, as discussed in Section 7.2.1.2. When channel activity is averaged over the entire scenario, as shown in Table C-8, the most significant tasking impacts are in internal vision (13.33% increase), left hand (5.07% increase), right hand (6.17% decrease), auditory (8.55% decrease), and a weighted average tasking increase of 1.03%.

Comparison with data from Table C-4 for the advanced flight deck copilot tasking in the normal ILS scenario indicates that the increased mission complexity of the weather deviation scenario served to amplify the impact of data link. Internal vision and left hand tasking was more adversely affected by data link in the weather deviation scenario. Conversely, right hand and auditory tasking was more favorably impacted. These trends are identical to those described in section C.2.1.2.

##### **C.2.2.2.1 Internal Vision**

Figure C-39 indicates internal vision tasking comparisons for the weather deviation scenario. As shown, tasking increases due to data link are identical to those of Figure C-17 for the normal ILS scenario, except for the key scenario events associated with the weather deviation. A large increase in internal vision tasking is evident at that time, coinciding with copilot interaction with the CDU to read uplinks and send downlinks.

##### **C.2.2.2.2 Left Hand**

Figure C-40 indicates left hand tasking comparisons. Comparison with Figure C-7 for the normal ILS scenario shows identical tasking increases due to data link except for weather deviation events. CDU key pushes due to uplink acknowledgments and downlink requests are responsible for this. This situation is similar to that for the conventional flight deck copilot tasking.

##### **C.2.2.2.3 Right Hand**

Figure C-41 compares data link and current NAS right hand tasking in the weather deviation scenario. A tasking reduction coinciding with weather deviation communications is due to the elimination of microphone keying tasks with data link.

##### **C.2.2.2.4 Auditory**

Figure C-42 indicates auditory tasking decreases coinciding with weather deviation events. The extra communications required for weather deviation produces a corresponding task reduction for data link implementation, as compared to the tasking comparisons in Figure C-21 for the normal ILS scenario.

#### **C.2.2.2.5 Weighted Channel Average**

As in the conventional flight deck case for the weather deviation scenario, an initial tasking increase due to increased visual tasking is followed by a tasking decrease due to reduced auditive tasking. A minor net increase in the weighted average tasking is the result. This is shown in Figure C-43.

### **C.3 ILS MISSED APPROACH WITH REROUTE**

This section presents TLA results based on a higher level of mission complexity than that achieved for the normal ILS scenario. This more complex scenario incorporates a pilot initiated missed approach and a rerouting to a holding fix.

Crew tasking analysis for this scenario was done for both current NAS (VHF voice) and data link communications. In the current NAS case, the flying pilot calls ATC requesting clearance to hold for 15 min. The nonflying pilot is retracting flaps and landing gear, and making callouts to the pilot during this time. In the data link case, the copilot (nonflying pilot) utilizes the data link to request holding. He does this at the same time as airplane reconfiguration and callouts are accomplished.

#### **C.3.1 Conventional Flight Deck**

This section presents TLA results for both crew members in a conventional flight deck operating in both a current NAS and a data link environment. Significant results are that data link implementation reduces pilot auditory and verbal tasking and that copilot verbal, left hand, and internal vision tasking are increased.

##### **C.3.1.1 Flying Pilot**

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision (1.22% increase), auditory (3.25% decrease), and verbal (2.7% decrease). These changes, as seen in Table C-9, combine to produce a net weighted average tasking decrease of 1.46%.

###### **C.3.1.1.1 Internal Vision**

Figure C-44 indicates comparative internal vision task loading for current NAS and data link environments. As seen in the detailed mission scenario, Appendix B, the missed approach scenario is identical to the normal ILS scenario up to approximately 865 sec elapsed time. As seen in Figure C-44, the use of data link results in two internal vision pilot tasking increases associated with the missed approach. The first tasking increase is due to the visual annunciation of a pending uplink (Task 1D16XX09). This uplink is read aloud by the copilot and advises that the preceding airplane encountered extreme wind-shear. The second tasking increase is due to visual annunciation of another uplink pending (Task 1D16XX02), which is read aloud by the copilot and provides clearance to a holding fix.

###### **C.3.1.1.2 Auditory**

Figure C-45 indicates comparative auditory task loading for current NAS and data link environments. An initial tasking decrease is followed by a tasking increase due to data link implementation causing the copilot to read the windshear warning to the pilot. This trend is repeated when the missed approach and holding instructions are read aloud by the copilot in the data link implementation.



#### **C.3.1.1.3 Verbal**

Figure C-46 compares current NAS and data link verbal tasking. Tasking decreases are shown to correlate with data link implementation eliminating pilot communication with ATC, since the copilot assumes communication tasks in the data link scenario. Tasking decreases correlate with the request for missed approach (Task 1P16FB16) and the holding request.

#### **C.3.1.1.4 Weighted Channel Average**

Figure C-47 compares current NAS and data link weighted channel average tasking. Verbal and auditory tasking decreases are seen to outweigh internal vision increases, producing a net tasking decrease during the missed approach segment of the scenario.

#### **C.3.1.2 Nonflying Pilot**

The nonflying pilot (copilot) channels impacted significantly by data link implementation are internal vision (13.11% increase), left hand (4.52% increase), right hand (5.0% decrease), auditory (10.62% decrease), and verbal (3.22% increase). These effects, as seen in Table C-10, combine to produce a net weighted channel average tasking increase of 0.91%.

##### **C.3.1.2.1 Internal Vision**

Figure C-48 indicates internal vision tasking for data link and current NAS environments. A tasking overload condition is indicated due to data link during the initial portion of the missed approach segment of the scenario. This overload correlates with Procedure 16FB05, "Copilot Goaround Activities," and Procedure 15YL01, "Missed Approach Call and Request for Holding." Instrument scan and flap/gear monitoring overlap with downlink selection using the CDU, creating the overload. A tasking decrease is then indicated, followed by another tasking increase. This is due to a shift in copilot tasking based on reading the holding clearance on the CDU instead of writing down the clearance while listening to the VHF voice.

##### **C.3.1.2.2 Left Hand**

A significant tasking increase due to data link is evident in Figure C-49. This increase correlates with the copilot selecting and sending downlink messages advising of a missed approach and requesting holding.

##### **C.3.1.2.3 Right Hand**

Figure C-50 indicates comparative tasking effects for data link and VHF voice. A right hand tasking decrease due to data link is correlated with elimination of the task of writing down the ATC clearance on paper.

##### **C.3.1.2.4 Auditory**

Figure C-51 indicates comparative auditory tasking for data link and VHF voice. A significant auditory tasking decrease is evident where the ATC clearance to the holding fix is uplinked on data link rather than by VHF voice.

### **C.3.1.2.5 Verbal**

A verbal tasking increase is indicated where the copilot reads the uplinked message out loud to the pilot in the data link implementation, as seen in Figure C-52. The significant tasking increase for the copilot using data link is primarily because the pilot handles the missed approach communications in the VHF voice case.

### **C.3.1.2.6 Weighted Channel Average**

Figure C-53 shows the overall impact of the individual tasking effects. Internal vision and left hand increases initially combine to produce an increase in the weighted channel average. Internal vision, right hand, and auditory decreases then combine to produce a decrease in the average. Internal vision and verbal tasking increases then combine to again increase the weighted channel average.

## **C.3.2 Advanced Flight Deck**

This section presents TLA results for both crew members in an advanced flight deck operating in both a current NAS and a data link environment. Significant results are that data link implementation reduces pilot left hand and right hand, auditory, and verbal channel tasking and increases pilot internal vision tasking. Data link impact on copilot tasking is primarily a tasking reduction for right hand and auditory channels, with some tasking increase for internal vision, left hand, cognition, and verbal channels.

### **C.3.2.1 Flying Pilot**

As shown in Table C-11, significant tasking impacts based on average scenario values due to data link are in internal vision (2.62% increase), left hand (4.95% decrease), right hand (2.11% decrease), auditory (2.92% decrease), and verbal (2.53% decrease). When combined in a weighted channel average, a 1.24% net tasking decrease is indicated.

#### **C.3.2.1.1 Internal Vision**

Figure C-54 indicates comparative internal vision task loading in the advanced flight deck for current NAS and data link environments. The first two tasking increases correlate with monitoring of the information management display, Task 1D16XX09, which annunciates the uplinked windshear advisory and clearance to the holding fix. The remaining tasking increases correlate with monitoring of the FMC route update on the map display of the EHSL.

#### **C.3.2.1.2 Left Hand**

Figure C-55 indicates a significant reduction in pilot left hand tasking due to data link. Examination of the mission scenario, Appendix B, reveals that the new route to the holding fix must be manually input into the FMC by the copilot in the current NAS case, while the data link implementation allows the new route to be automatically transferred into the FMC. The decreased time needed to engage the new route in the FMC means less manual flight tasking for the pilot, producing this tasking decrease.

#### **C.3.2.1.3 Right Hand**

Figure C-56 indicates a tasking decrease for the right hand which is of a similar nature to that for the left hand tasking previously discussed. The lesser magnitude of tasking is indicative of throttle control for the right hand, as opposed to left hand for the control wheel.

#### **C.3.2.1.4 Auditory**

The alternating auditory decreases and increases shown in Figure C-57 are due to data link implementation shifting the pilot's auditive tasking from monitoring ATC on VHF voice to monitoring the copilot callouts of the uplinks.

#### **C.3.2.1.5 Verbal**

Figure C-58 indicates verbal tasking decreases provided by data link, shifting the task of calling ATC from the pilot using voice to the copilot using the data link CDU.

#### **C.3.2.1.6 Weighted Channel Average**

Figure C-59 indicates data link impact on weighted channel average tasking. Auditory and verbal tasking decreases outweigh internal vision tasking increases in the initial portion of the missed approach segment, producing a net weighted channel decrease. Left and right hand tasking decreases in the latter portion of the scenario continue the net tasking decrease.

#### **C.3.2.2 Nonflying Pilot**

As shown in Table C-12, significant tasking impacts due to data link, based on average scenario values, are in internal vision (8.9% increase), left hand (4.2% increase), right hand (10.3% decrease), cognition (2.0% increase), auditory (9.95% decrease), and verbal (3.15% increase). When combined in a weighted channel average, a net 0.29% tasking increase is indicated.

##### **C.3.2.2.1 Internal Vision**

Figure C-60 indicates comparative internal vision task loading in the advanced flight deck for current NAS and data link environments. A tasking overload condition is indicated due to data link during the initial portion of the missed approach segment of the scenario. As in the comparative task loading for the conventional flight deck, this overload correlates with Procedure 16FB05, "Copilot Goaround Activities," and Procedure 16YL01, "Missed Approach Call and Request for Holding." Instrument scan and flap/gear monitoring overlap with downlink selection using the CDU, creating the overload. A tasking decrease is then indicated, correlating with the elimination of the copilot writing down the clearance on paper. A second tasking decrease is then indicated, correlating with the automatic transfer of the new route clearance to the FMC. The data link implementation thus eliminates the copilot tasks of creating and entering a DIRECT-TO waypoint with the FMC CDU.

##### **C.3.2.2.2 Left Hand**

Figure C-61 indicates a significant tasking increase due to data link, which correlates with the copilot selecting and sending downlink messages advising of a missed approach and requesting holding. This effect is similar to that for the conventional flight deck.

##### **C.3.2.2.3 Right Hand**

Figure C-62 indicates a significant tasking decrease due to data link implementation. This tasking decrease is greater than that for the conventional flight deck which has no capability for lateral navigation without an FMC. The advanced flight deck in the VHF voice implementation incorporates a current technology type of FMC requiring manual route modifications via the CDU keypad. The data link implementation in the advanced flight deck, however, permits route modifications to be automatically

transferred from the data link system to the FMC, eliminating manual crew interface with the CDU. This produces the significant right hand tasking decrease as shown.

#### **C.3.2.2.4 Cognition**

Figure C-63 indicates comparative cognitive task loading. A large tasking increase is indicated due to data link at the end of the scenario. This is due to the fact that the VHF voice implementation requires the copilot to enter data into the CDU to modify the route. In the data link implementation, this task is eliminated, opening up a time window for the copilot to resume a scan of the instrument panel. The detailed mission scenario, Appendix B, shows that Procedure 180073, "Flight Instrument Scan," is tasked for the last 40 sec of the scenario in the advanced flight deck. This scan is at a higher level of cognitive loading than the CDU data entry in the conventional flight deck, producing a somewhat arbitrary tasking increase for the data link implementation.

#### **C.3.2.2.5 Auditory**

Figure C-64 indicates comparative auditory tasking. A significant tasking decrease, similar to that for the conventional flight deck, is evident where the windshear advisory and clearance to the holding fix is uplinked on data link instead of by VHF voice.

#### **C.3.2.2.6 Verbal**

Figure C-65 shows comparative verbal tasking for data link and VHF voice. As in the conventional flight deck case, two significant verbal tasking increases occur due to data link implementation requiring the copilot to read the uplinked messages to the pilot. The first increase correlates with the windshear advisory uplink and the second increase with the clearance to the holding fix.

#### **C.3.2.2.7 Weighted Channel Average**

Figure C-66 shows the overall impact of the individual tasking effects. Internal vision, left hand, and verbal tasking increases outweigh auditory tasking decreases to produce a net tasking decrease during the initial portion of the missed approach segment of the scenario. Internal vision, right hand, and auditory tasking decreases then combine to produce a net tasking decrease. A smaller net tasking increase is then produced primarily by increased verbal tasking, followed by a net decrease and then a net increase due to right hand and cognitive effects, respectively.

### **C.4 ILS APPROACH WITH TCAS ENCOUNTER**

This section compares crew tasking based on a scenario having an evasive collision avoidance maneuver to crew tasking based on a normal ILS approach. The TLA results previously discussed in section C.1 are utilized as the baseline for comparison to the TCAS encounter tasking results. The rationale for this comparison is that previous TCAS research has disclosed the probability of a significant false alarm rate. Were such a false alarm to occur, the actual crew tasking increase would be in relation to the nominal crew tasking resulting from a scenario without any ATC intervention or other abnormalities. It should be noted that both scenarios utilize VHF voice communications, since TCAS implementation does not require a data link for pilot/controller communication.

#### **C.4.1 Conventional Flight Deck**

This section presents TLA results for both crew members in two conventional flight deck implementations; one which includes TCAS and one which excludes TCAS. The pilot tasking results which are most

significantly increased due to TCAS implementation are external vision, left hand, and auditory channels. Significant copilot tasking results increased due to TCAS are internal vision, cognition, and verbal channels.

#### **C.4.1.1 Flying Pilot**

As shown in Table C-13, tasking effects due to TCAS, which are based on average scenario values, are in external vision (2.3% increase), internal vision (0.85% increase), left hand (3.5% increase), right hand (1.5% increase), cognition (0.82% increase), and auditory (2.5% increase) tasking. When combined as a weighted channel average, a 2.03% tasking increase is indicated.

##### **C.4.1.1.1 External Vision**

Figure C-67 indicates comparative external vision tasking for a nominal ILS approach and a TCAS encounter. As seen in the figure and by reference to the detailed mission scenario in Appendix B, a large tasking increase is correlated with a pilot external vision scan. This scan begins after the TCAS caution alert which annunciates a traffic advisory, and continues through the resolution advisory until clear of traffic.

##### **C.4.1.1.2 Internal Vision**

Figure C-68 indicates comparative internal vision tasking for the nominal ILS approach and the TCAS encounter. This increase begins with the master caution visual alert annunciating the TCAS traffic advisory. Pilot monitoring of the TCAS traffic display then dominates the internal vision channel until annunciation of the resolution advisory, at which time the time critical climb warning on the IVSI is monitored.

##### **C.4.1.1.3 Left Hand**

Figure C-69 indicates the left hand tasking effects due to TCAS. The tasking increase shown correlates with Task 4A 29, "Actuate Flight Controls to Change Altitude," which occurs shortly after annunciation of the resolution advisory and continues until clear of traffic and the autopilot is re-engaged.

##### **C.4.1.1.4 Right Hand**

Figure C-70 indicates right hand tasking effects due to TCAS. Right hand tasking increases coincide with left hand increases due to Task 4A 29, although at a lower level. Task 4B 03, "Actuate Both Throttles," also contributes to this loading.

##### **C.4.1.1.5 Cognitive**

Figure C-71 indicates cognitive tasking effects due to TCAS. The tasking increase shown correlates with the TCAS resolution advisory and a pilot judgment task where the decision is made to respond to the resolution advisory. IVSI monitoring and TCAS traffic display monitoring also contribute to this tasking.

##### **C.4.1.1.6 Auditory**

Figure C-72 indicates auditory tasking increases due to TCAS. The highest tasking increase occurs near the resolution advisory when several copilot callouts are monitored as the copilot advises of the intruder's relative bearing and altitude. Other tasking increases correlate with a copilot callout when clear of traffic and when ATC advises to continue descent.

#### **C.4.1.1.7 Weighted Channel Average**

Figure C-73 indicates the combined effect of the individual channel increases. The peak tasking increase occurs about 5 sec after beginning to respond to the TCAS time critical climb warning, while actuating the flight controls, monitoring the IVSI, visually scanning outside, and monitoring the copilot callouts.

#### **C.4.1.2 Nonflying Pilot**

As shown in Table C-14, tasking effects due to TCAS averaged over the entire scenario are in internal vision (2.25% increase), right hand (0.87% increase), cognition (1.86% increase), auditory (1.46% increase), verbal (2.37% increase), and weighted channel average (2.13% increase).

##### **C.4.1.2.1 Internal Vision**

Figure C-74 indicates a significant tasking increase due to TCAS which continues throughout the TCAS encounter. Primary tasks contributing to this tasking increase are Task 1TC00004, "Monitoring TCAS Traffic Display," and Task 1TC00007, "Monitoring Time Critical IVSI Display." Monitoring caution and warning visual alerts and the visual alert display also contribute to this tasking increase.

##### **C.4.1.2.2 Right Hand**

Figure C-75 indicates right hand tasking increases due to TCAS. This increase correlates with the copilot calling ATC to advise of the TCAS evasive maneuver.

##### **C.4.1.2.3 Cognitive**

Figure C-76 indicates a cognitive tasking increase due to TCAS which continues throughout the TCAS encounter. Primary tasks contributing to this increase are TCAS traffic display and IVSI monitoring, as in the internal vision channel.

##### **C.4.1.2.4 Auditory**

Figure C-77 indicates the auditive tasking increases due to TCAS. Aural alert and pilot callout monitoring as well as ATC monitoring creates this increase.

##### **C.4.1.2.5 Verbal**

Figure C-78 indicates verbal tasking increases due to TCAS. Callouts of intruder bearing and altitude, as well as communication with ATC, create this tasking increase.

##### **C.4.1.2.6 Weighted Channel Average**

Figure C-79 indicates the combined effect of the individual channel increases. The peak tasking increase occurs approximately 5 sec after the evasive maneuver is begun, while monitoring the TCAS traffic display, making callouts, and monitoring the IVSI.

#### **C.4.2 Advanced Flight Deck**

This section presents TLA results for both crew members in two advanced flight deck implementations; one which includes TCAS and one which excludes TCAS.

#### **C.4.2.1 Flying Pilot**

Figure C-80 through Figure C-86 indicate pilot tasking effects due to TCAS. Note that each channel tasking increase is very similar to the results of section C.4.1.1 for the conventional flight deck. These tasking increases are summarized in Table C-15.

#### **C.4.2.2 Nonflying Pilot**

Figure C-87 through Figure C-92 indicate copilot tasking effects due to TCAS. Note that each channel tasking increase is very similar to the results of section C.4.1.2 for the conventional flight deck. These tasking increases are summarized in Table C-16.

Table C-1. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO			
CONVENTIONAL FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	8.06	8.06	0.0
INTERNAL VISION	44.46	46.01	1.55
LEFT HAND	41.12	41.12	0.0
RIGHT HAND	19.10	19.10	0.0
COGNITION	50.04	50.00	-.04
AUDITORY	12.37	10.47	-1.90
VERBAL	.89	.89	0.0
WEIGHTED AVERAGE	33.63	33.53	-.10



Table C-2. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT  
(RIGHT SEAT)

<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	8.20	6.26	-1.94
INTERNAL VISION	28.23	38.80	10.57
LEFT HAND	8.75	12.24	3.49
RIGHT HAND	6.88	2.09	-4.79
COGNITION	16.25	16.31	.06
AUDITORY	9.82	2.48	-7.34
VERBAL	7.96	9.04	1.08
WEIGHTED AVERAGE	18.59	19.12	.53

Table C-3. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO			
ADVANCED FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	<u>CURRENT NAS</u> <u>VHF VOICE</u>	<u>MODE-S</u> <u>DATA LINK</u>	
EXTERNAL VISION	3.03	3.03	0.0
INTERNAL VISION	48.67	50.38	1.71
LEFT HAND	1.07	1.07	0.0
RIGHT HAND	2.92	2.85	-.07
COGNITION	44.79	44.70	-.09
AUDITORY	12.30	10.39	-1.91
VERBAL	.75	.75	0.0
WEIGHTED AVERAGE	27.63	27.56	-.07

Table C-4. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

ADVANCED FLIGHT DECK

NON-FLYING PILOT  
(RIGHT SEAT)

<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	7.35	5.90	-1.45
INTERNAL VISION	28.00	38.57	10.57
LEFT HAND	8.75	12.24	3.49
RIGHT HAND	6.88	2.09	-4.79
COGNITION	15.54	15.70	.16
AUDITORY	9.63	2.28	-7.35
VERBAL	7.86	8.94	1.08
WEIGHTED AVERAGE	18.07	18.74	.67

Table C-5. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION			
CONVENTIONAL FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	8.18	8.18	0.0
INTERNAL VISION	43.63	45.38	1.75
LEFT HAND	42.09	42.09	0.0
RIGHT HAND	19.67	19.67	0.0
COGNITION	49.47	49.45	-.02
AUDITORY	13.73	11.79	-1.94
VERBAL	0.89	0.89	0.0
WEIGHTED AVERAGE	33.75	33.69	-.06

Table C-6. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION			
CONVENTIONAL FLIGHT DECK			
NON-FLYING PILOT (RIGHT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	7.84	5.90	-1.94
INTERNAL VISION	28.40	41.73	13.33
LEFT HAND	8.75	13.82	5.07
RIGHT HAND	8.26	2.09	-6.17
COGNITION	16.52	16.66	.14
AUDITORY	11.18	2.63	-8.55
VERBAL	9.37	10.20	.83
WEIGHTED AVERAGE	19.39	20.27	.88

Table C-7. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION			
ADVANCED FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	3.03	3.03	0.0
INTERNAL VISION	47.07	50.57	3.50
LEFT HAND	1.07	1.07	0.0
RIGHT HAND	2.92	2.85	-.07
COGNITION	43.22	44.85	1.63
AUDITORY	13.66	11.71	-1.95
VERBAL	.75	.75	0.0
WEIGHTED AVERAGE	27.18	27.97	.79

Table C-8. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

ADVANCED FLIGHT DECK

NON-FLYING PILOT  
(RIGHT SEAT)

<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	6.99	5.53	-1.46
INTERNAL VISION	28.17	41.50	13.33
LEFT HAND	8.75	13.82	5.07
RIGHT HAND	8.26	2.09	-6.17
COGNITION	15.81	16.05	.24
AUDITORY	10.99	2.44	-8.55
VERBAL	9.27	10.11	.84
WEIGHTED AVERAGE	18.87	19.90	1.03

Table C-9. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE			
CONVENTIONAL FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	2.76	2.73	-.03
INTERNAL VISION	42.97	44.19	1.22
LEFT HAND	40.00	39.58	-.42
RIGHT HAND	18.41	18.21	-.20
COGNITION	47.03	46.13	-.90
AUDITORY	16.36	13.11	-3.25
VERBAL	4.62	1.92	-2.70
WEIGHTED AVERAGE	32.09	30.63	-1.46



Table C-10. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT  
(RIGHT SEAT)

<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	6.92	5.03	-1.89
INTERNAL VISION	30.13	43.24	13.11
LEFT HAND	10.38	14.90	4.52
RIGHT HAND	7.52	2.52	-5.00
COGNITION	15.41	15.35	-.06
AUDITORY	14.03	3.41	-10.62
VERBAL	8.73	11.95	3.22
WEIGHTED AVERAGE	19.92	20.83	.91

Table C-11. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE ADVANCED FLIGHT DECK FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	.99	.99	0.0
INTERNAL VISION	47.06	49.68	2.62
LEFT HAND	10.89	5.94	-4.95
RIGHT HAND	8.15	6.04	-2.11
COGNITION	44.04	43.68	-.36
AUDITORY	15.31	12.39	-2.92
VERBAL	4.20	1.67	-2.53
WEIGHTED AVERAGE	29.09	27.85	-1.24

Table C-12. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE ADVANCED FLIGHT DECK NON-FLYING PILOT (RIGHT SEAT)			
<u>CHANNEL</u>	PERCENT TASKING AVERAGED <u>OVER ENTIRE SCENARIO</u>		PERCENT INCREASE <u>(DECREASE)</u>
	CURRENT NAS <u>VHF VOICE</u>	MODE-S <u>DATA LINK</u>	
EXTERNAL VISION	6.76	5.27	-1.49
INTERNAL VISION	33.06	41.97	8.91
LEFT HAND	9.76	13.99	4.23
RIGHT HAND	12.71	2.40	-10.31
COGNITION	13.66	15.71	2.05
AUDITORY	12.99	3.04	-9.95
VERBAL	8.11	11.26	3.15
WEIGHTED AVERAGE	20.05	20.34	.29

Table C-13. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER			
CONVENTIONAL FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	8.06	10.39	2.33
INTERNAL VISION	44.46	45.31	.85
LEFT HAND	41.12	44.61	3.49
RIGHT HAND	19.10	20.58	1.48
COGNITION	50.04	50.86	.82
AUDITORY	12.37	14.84	2.47
VERBAL	0.89	1.28	.39
WEIGHTED AVERAGE	33.63	35.66	2.03

Table C-14. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT  
(RIGHT SEAT)

<u>CHANNEL</u>	PERCENT TASKING AVERAGED <u>OVER ENTIRE SCENARIO</u>		PERCENT INCREASE <u>(DECREASE)</u>
	<u>CURRENT NAS</u> <u>VHF VOICE</u>	<u>MODE-S</u> <u>DATA LINK</u>	
EXTERNAL VISION	8.20	8.45	.25
INTERNAL VISION	28.23	30.48	2.25
LEFT HAND	8.75	9.02	.27
RIGHT HAND	6.88	7.85	.97
COGNITION	16.25	18.11	1.86
AUDITORY	9.82	11.28	1.46
VERBAL	7.96	10.33	2.37
WEIGHTED AVERAGE	18.59	20.72	2.13

Table C-15. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER			
ADVANCED FLIGHT DECK			
FLYING PILOT (LEFT SEAT)			
<u>CHANNEL</u>	<u>PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS VHF VOICE</u>	<u>MODE-S DATA LINK</u>	
EXTERNAL VISION	3.03	5.36	2.33
INTERNAL VISION	48.67	49.52	.85
LEFT HAND	1.07	4.57	3.50
RIGHT HAND	2.92	4.72	1.80
COGNITION	44.79	45.61	.82
AUDITORY	12.30	14.77	2.47
VERBAL	.75	1.14	.39
WEIGHTED AVERAGE	27.63	29.68	2.05

Table C-16. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER			
ADVANCED FLIGHT DECK			
NON-FLYING PILOT (RIGHT SEAT)			
<u>CHANNEL</u>	PERCENT TASKING AVERAGED <u>OVER ENTIRE SCENARIO</u>		<u>PERCENT INCREASE (DECREASE)</u>
	<u>CURRENT NAS</u> <u>VHF VOICE</u>	<u>MODE-S</u> <u>DATA LINK</u>	
EXTERNAL VISION	7.35	7.60	.25
INTERNAL VISION	28.00	30.25	2.25
LEFT HAND	8.75	9.02	.27
RIGHT HAND	6.88	7.85	.97
COGNITION	15.54	17.41	1.87
AUDITORY	9.63	11.09	1.46
VERBAL	7.86	10.23	2.37
WEIGHTED AVERAGE	18.07	20.20	2.13

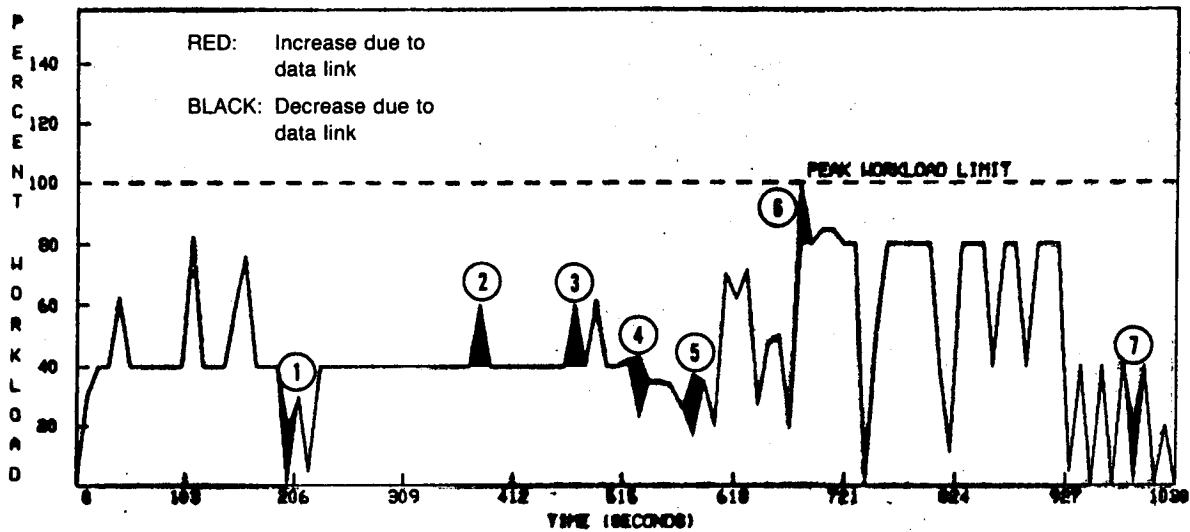


Figure C-1. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel Normal ILS Approach

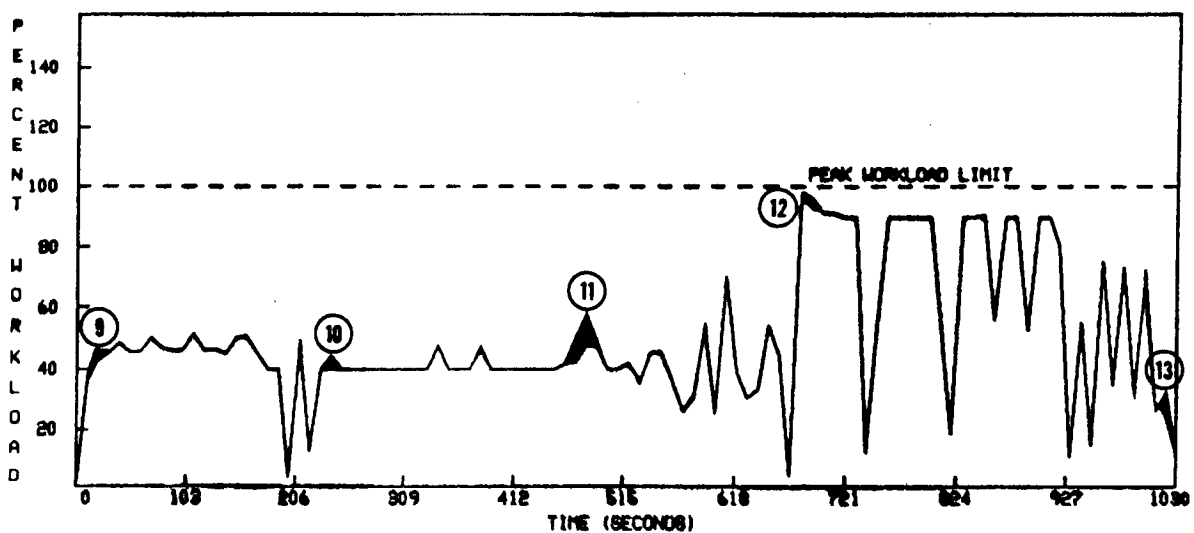


Figure C-2. Conventional Flight Deck, Pilot Tasking, Cognitive Channel Normal ILS Approach

Note: Circled numbers are referenced on pages C3 and C4.

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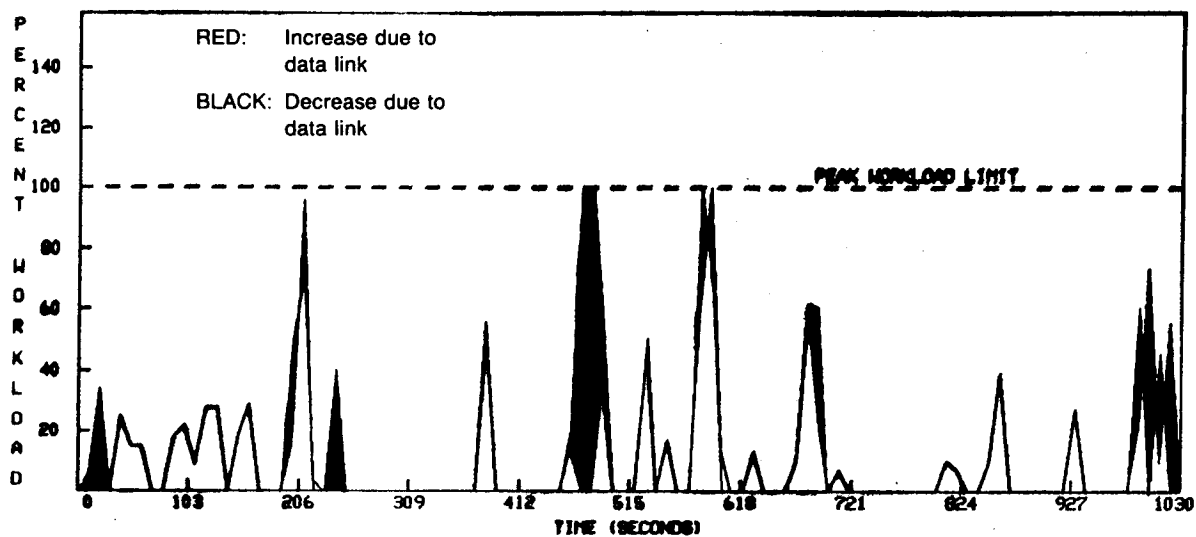


Figure C-3. Conventional Flight Deck, Pilot Tasking, Auditory Channel Normal ILS Approach

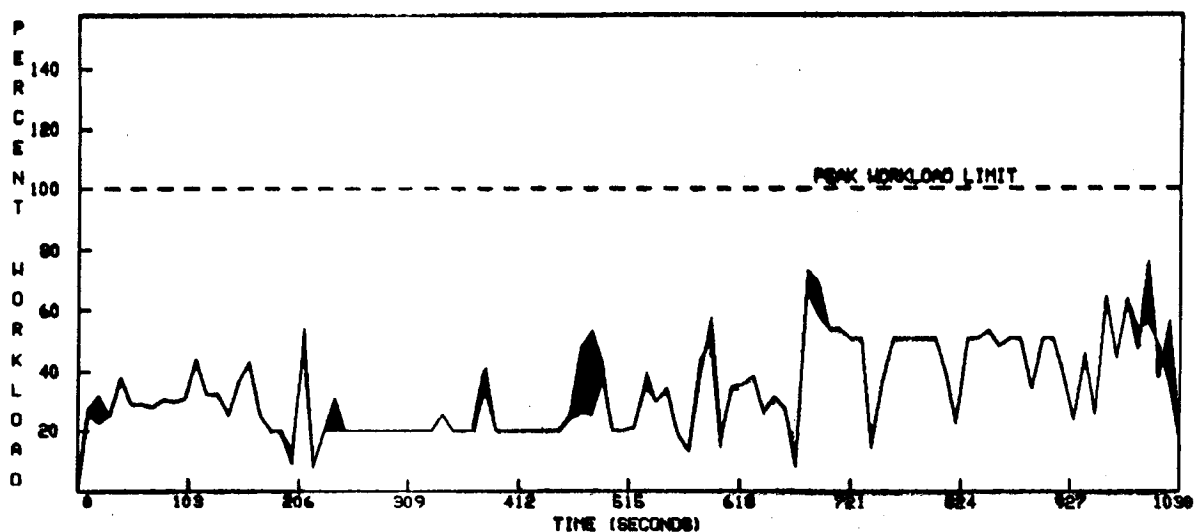


Figure C-4. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average Normal ILS Approach

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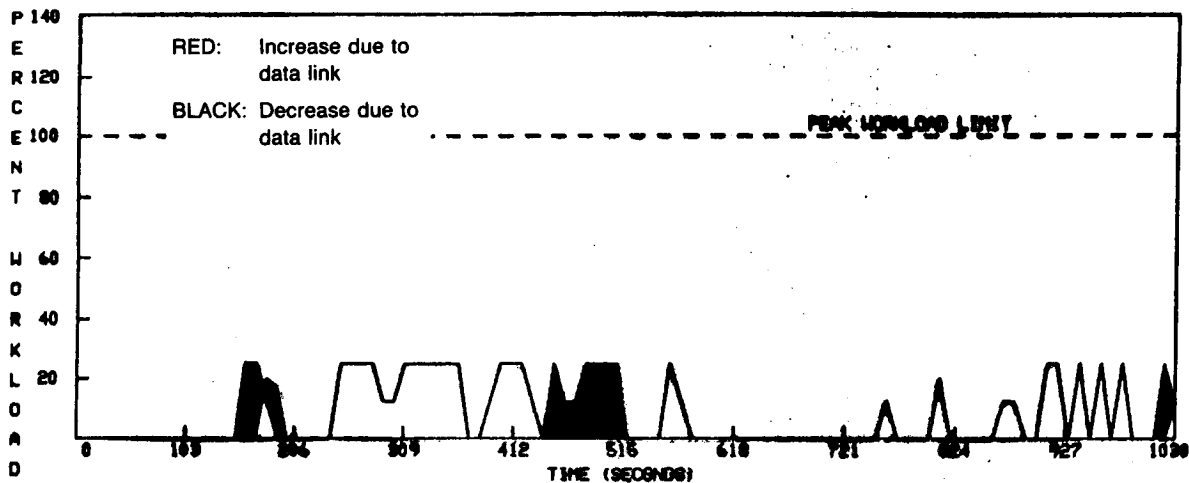


Figure C-5. Conventional Flight Deck, Copilot Tasking, External Vision Channel Normal ILS Approach

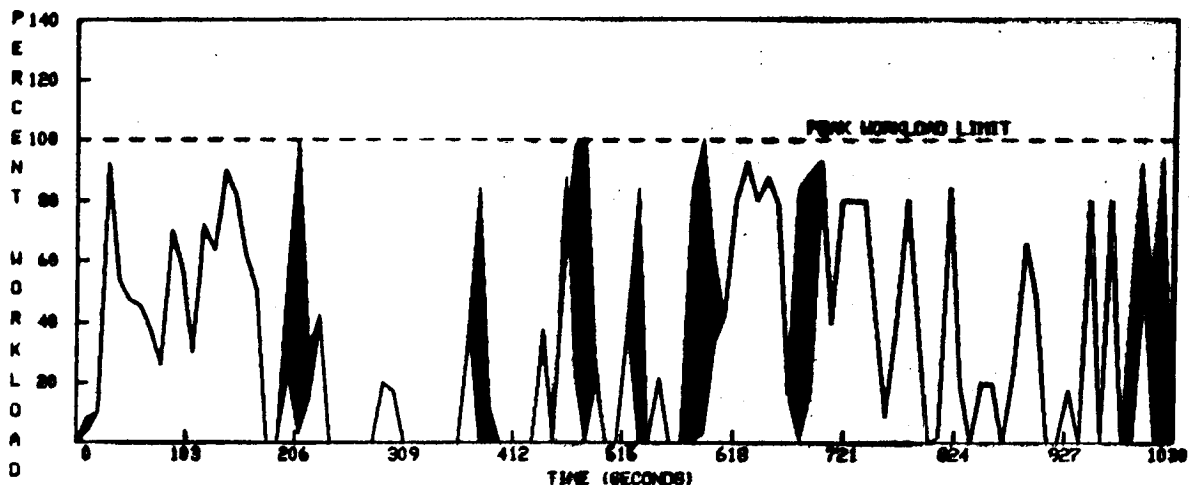


Figure C-6. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel Normal ILS Approach

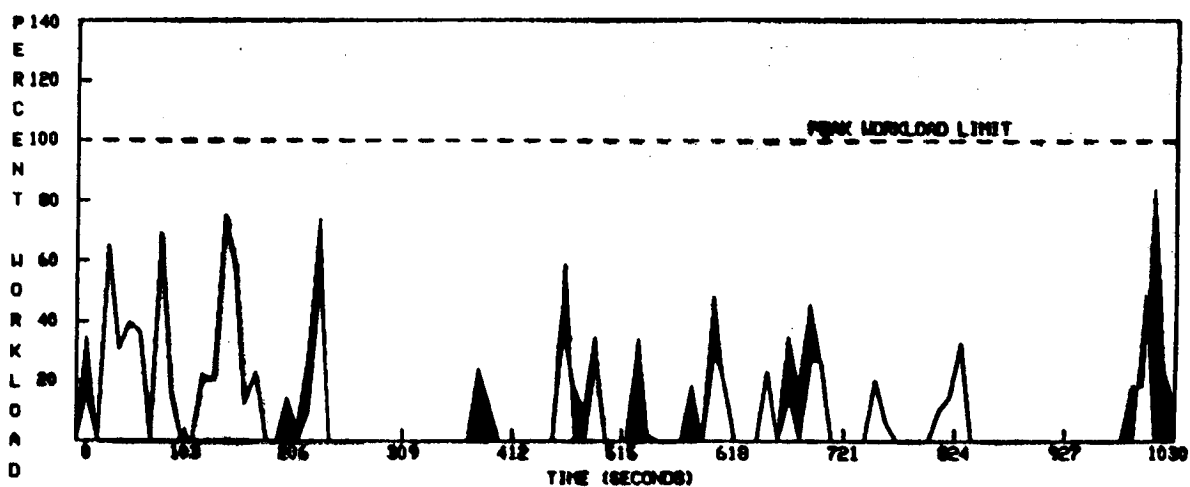


Figure C-7. Conventional Flight Deck, Copilot Tasking, Left Hand Channel Normal ILS Approach

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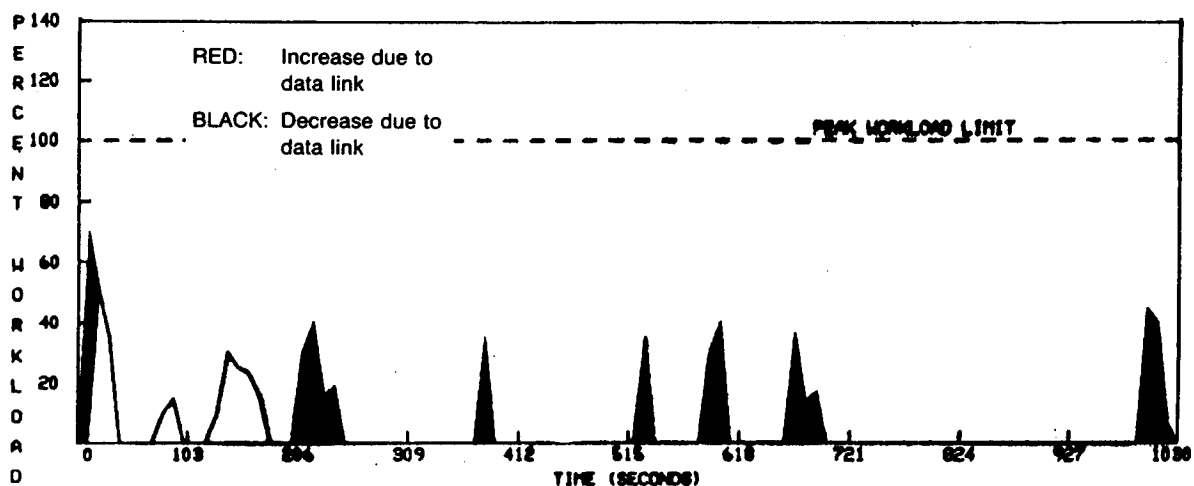


Figure C-8. Conventional Flight Deck, Copilot Tasking, Right Hand Channel Normal ILS Approach

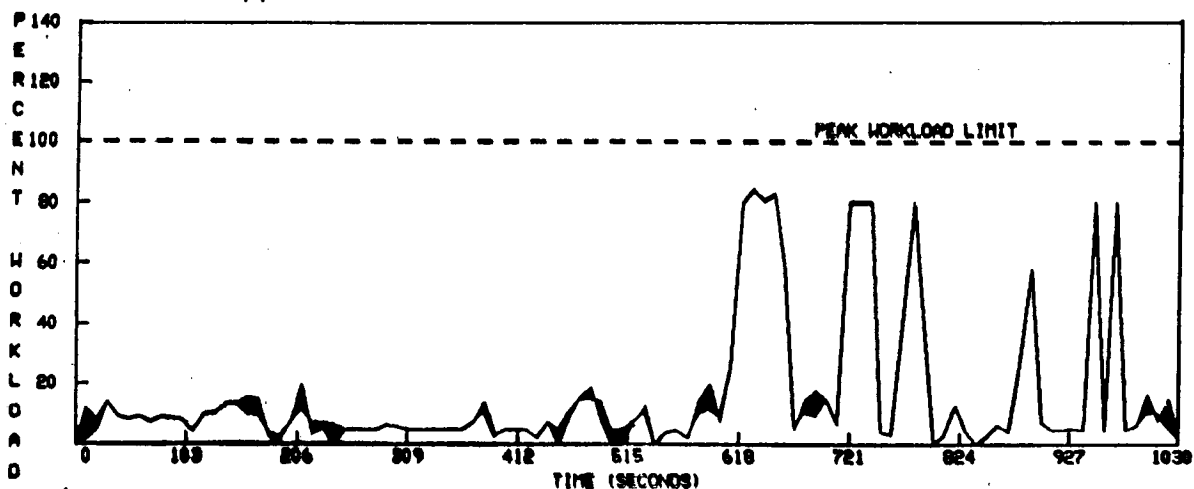


Figure C-9. Conventional Flight Deck, Copilot Tasking, Cognitive Channel Normal ILS Approach

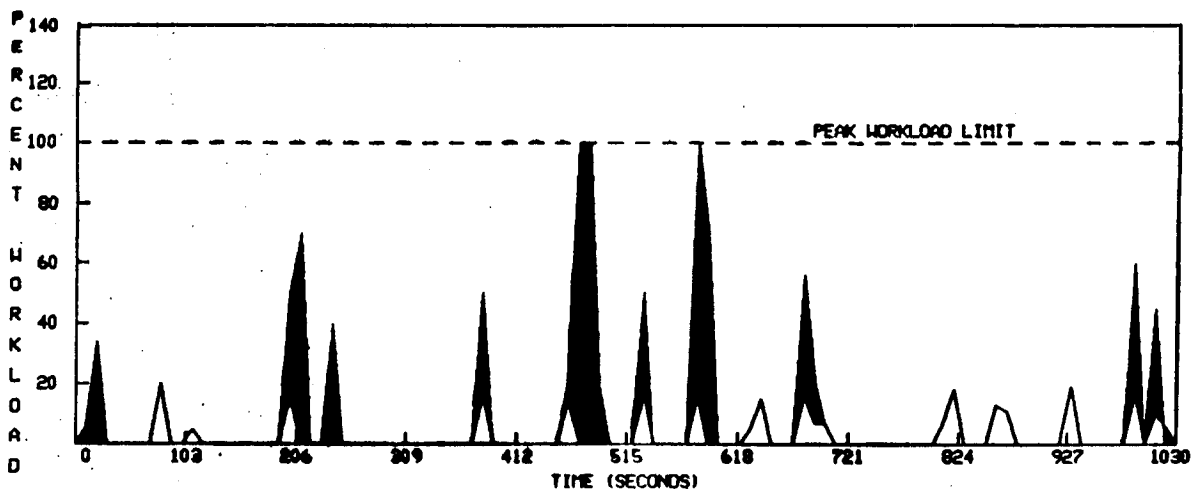


Figure C-10. Conventional Flight Deck, Copilot Tasking, Auditory Channel Normal ILS Approach

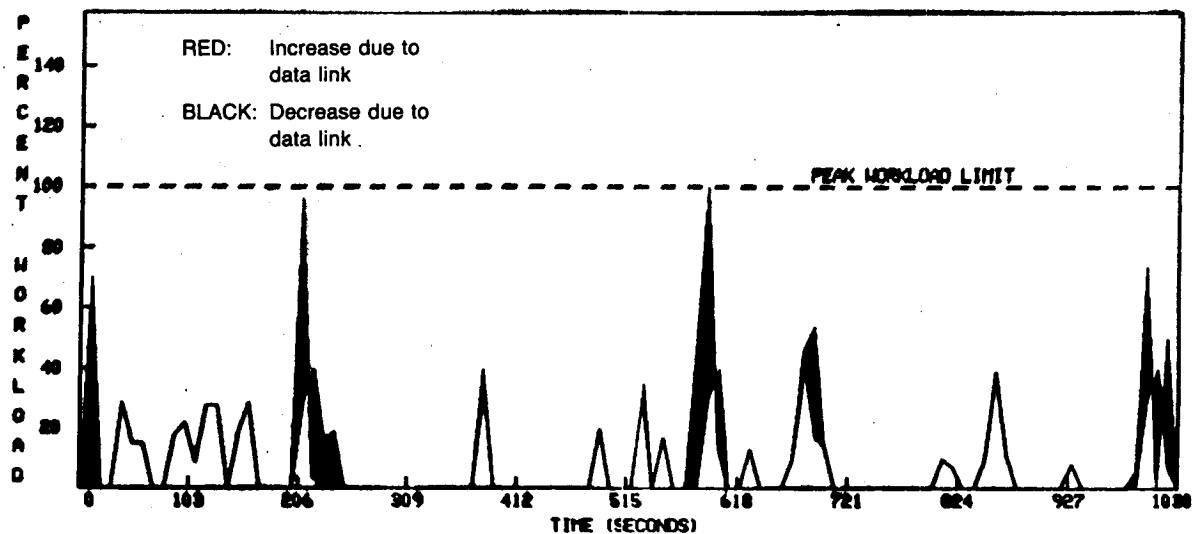


Figure C-11. Conventional Flight Deck, Copilot Tasking, Verbal Channel Normal ILS Approach

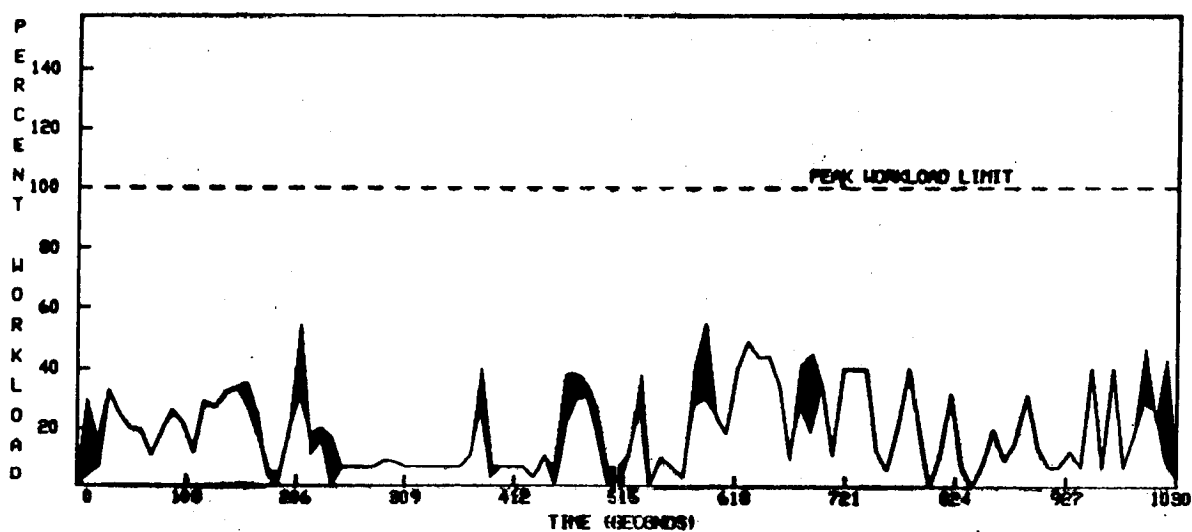


Figure C-12. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average Normal ILS Approach

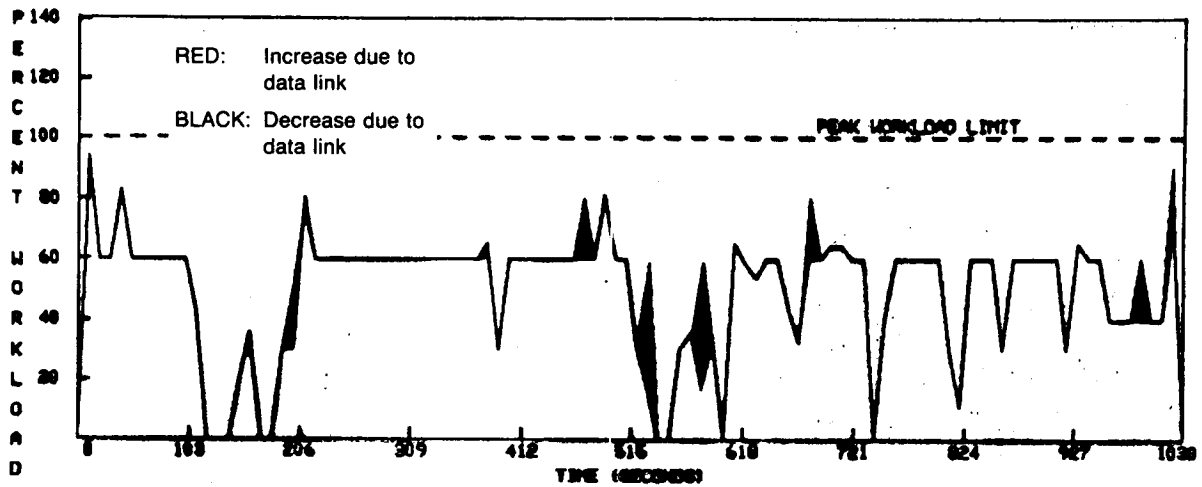


Figure C-13. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel Normal ILS Approach

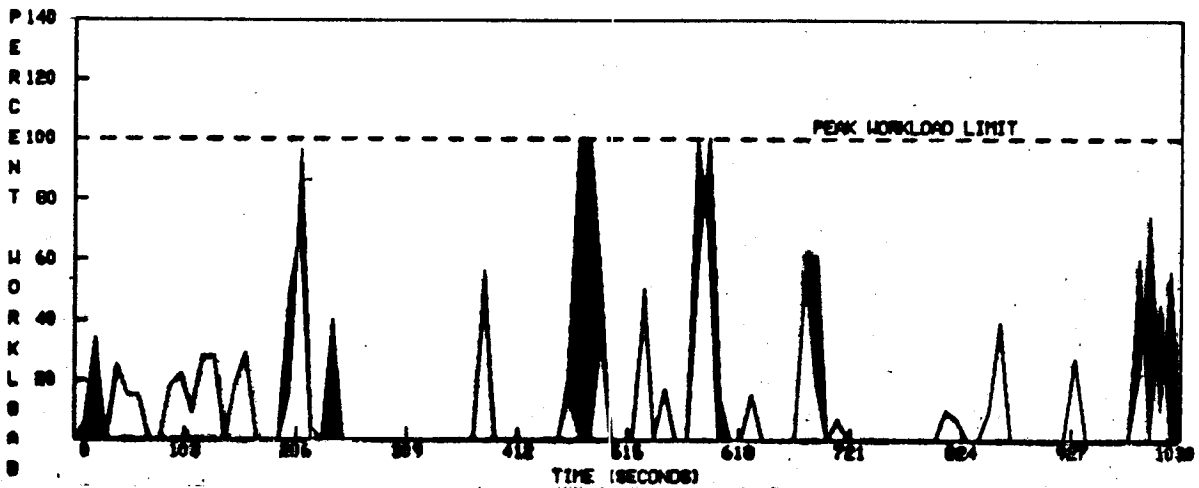


Figure C-14. Advanced Flight Deck, Pilot Tasking, Auditory Channel Normal ILS Approach

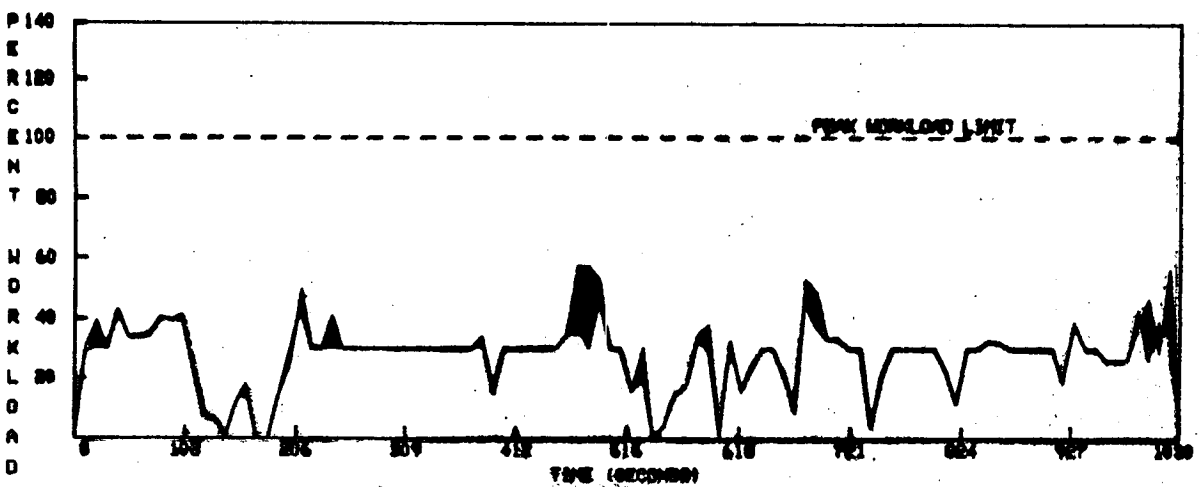


Figure C-15. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average Normal ILS Approach

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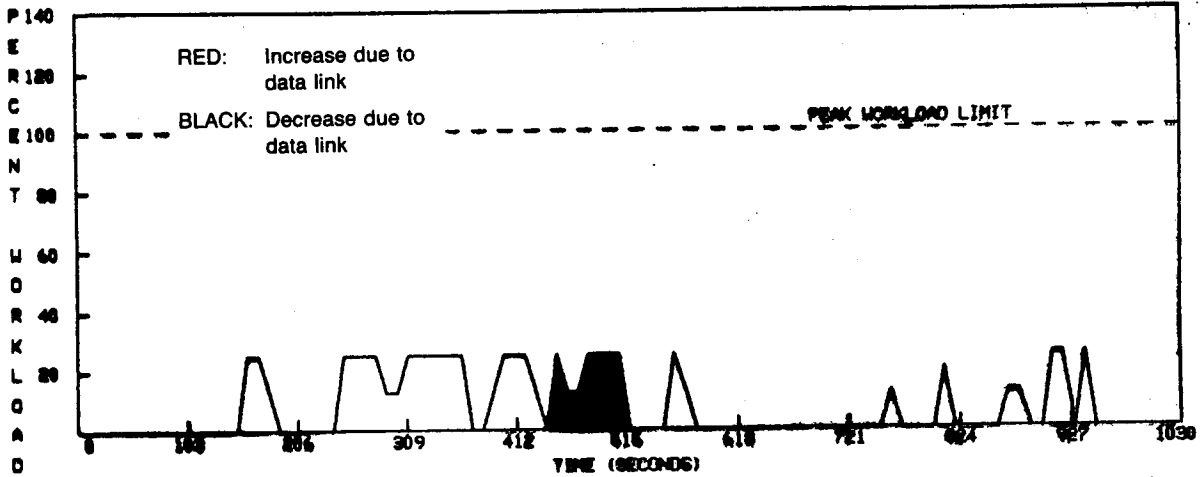


Figure C-16. Advanced Flight Deck, Copilot Tasking, External Vision Channel Normal ILS Approach

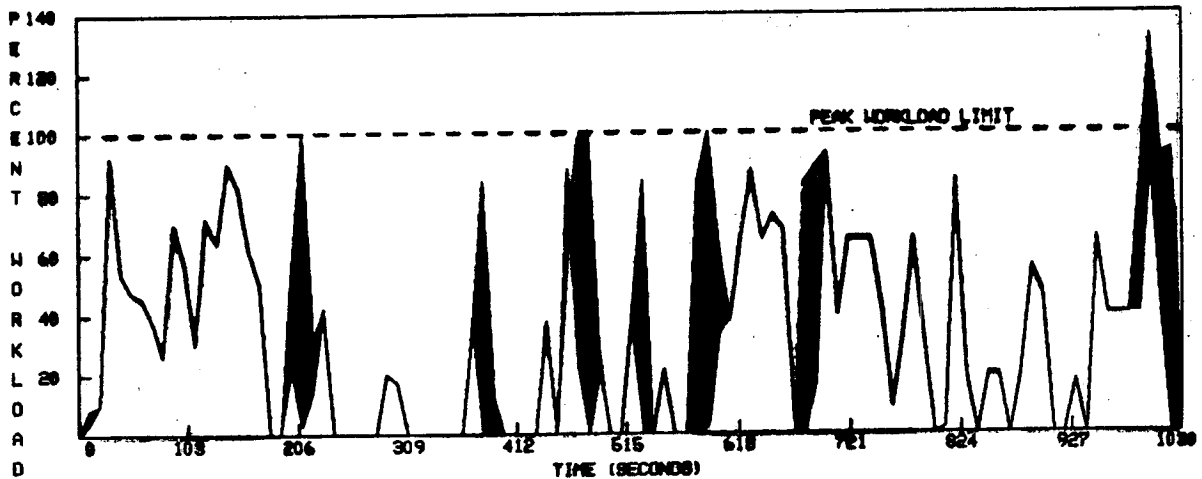


Figure C-17. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel Normal ILS Approach

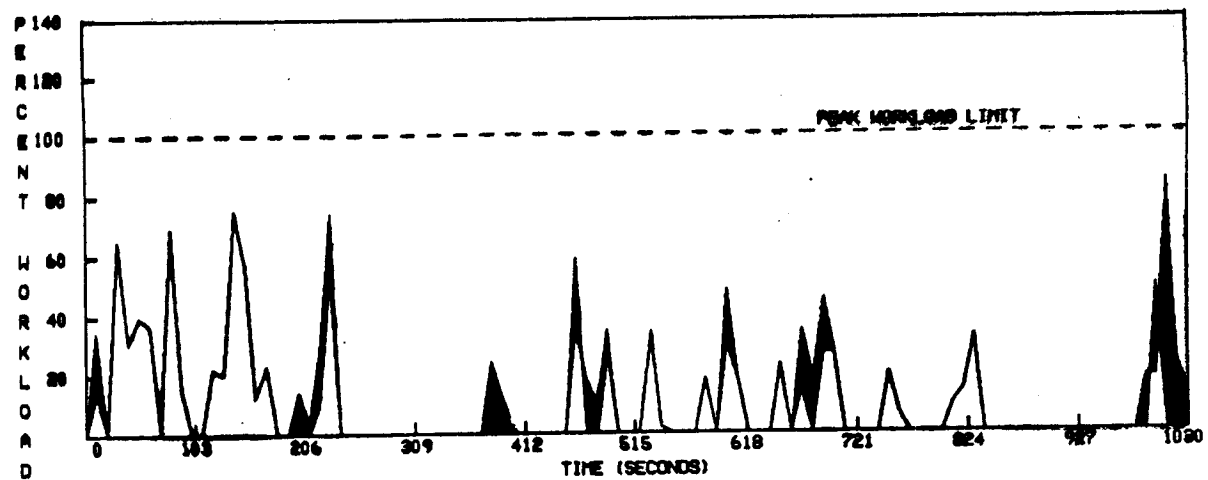


Figure C-18. Advanced Flight Deck, Copilot Tasking, Left Hand Channel Normal ILS Approach

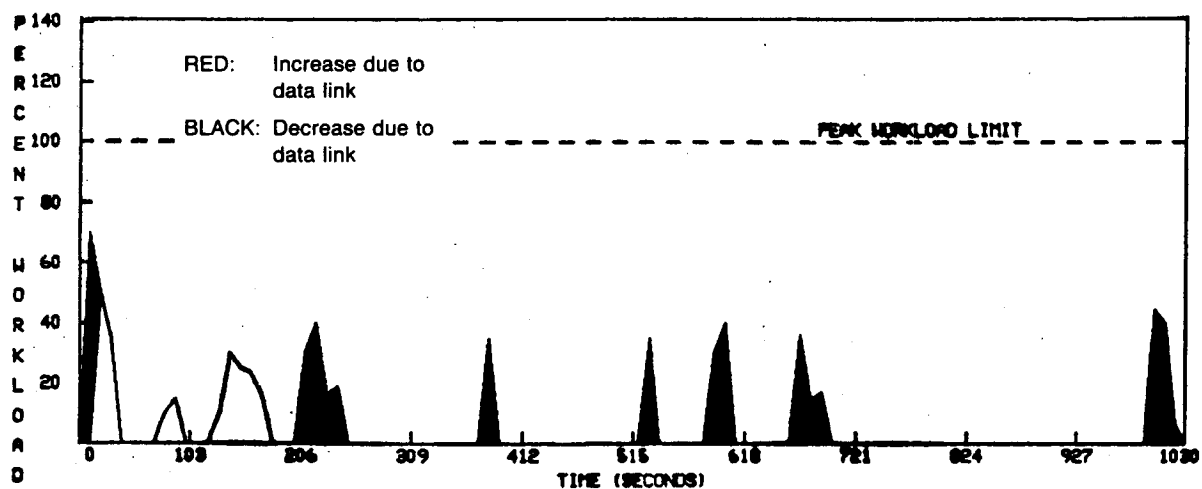


Figure C-19. Advanced Flight Deck, Copilot Tasking, Right Hand Channel Normal ILS Approach

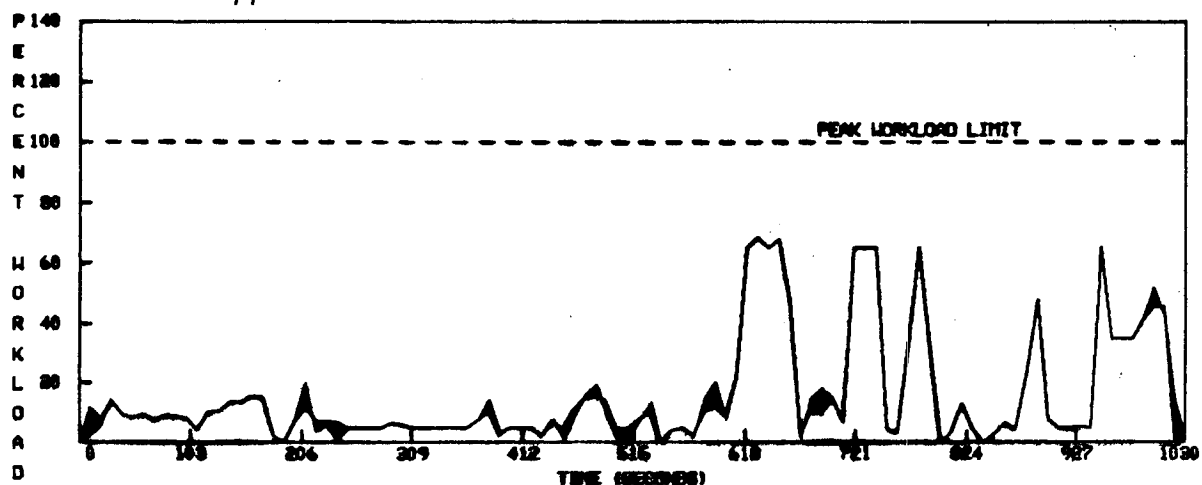


Figure C-20. Advanced Flight Deck, Copilot Tasking, Cognitive Channel Normal ILS Approach

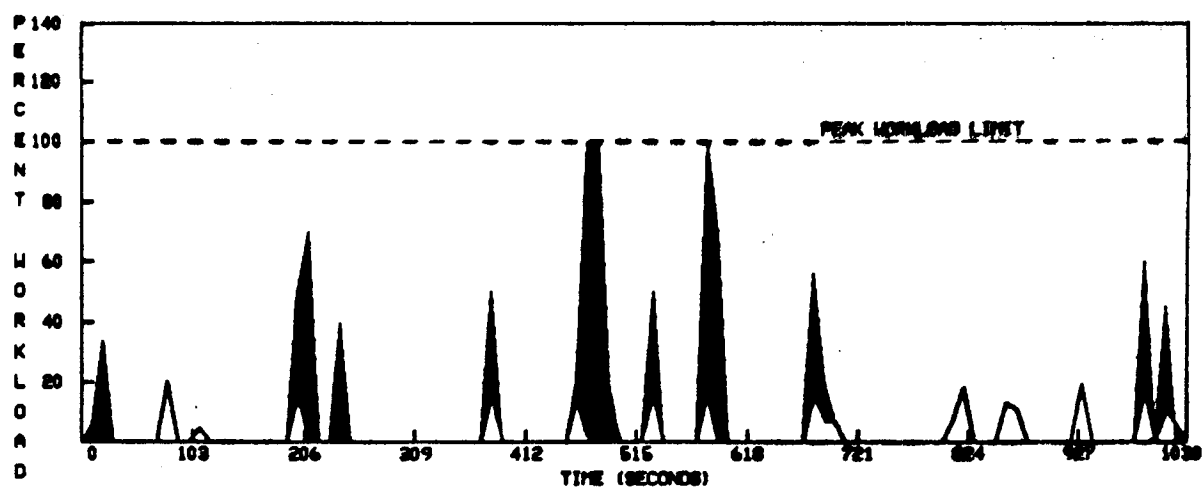


Figure C-21. Advanced Flight Deck, Copilot Tasking, Auditory Channel Normal ILS Approach

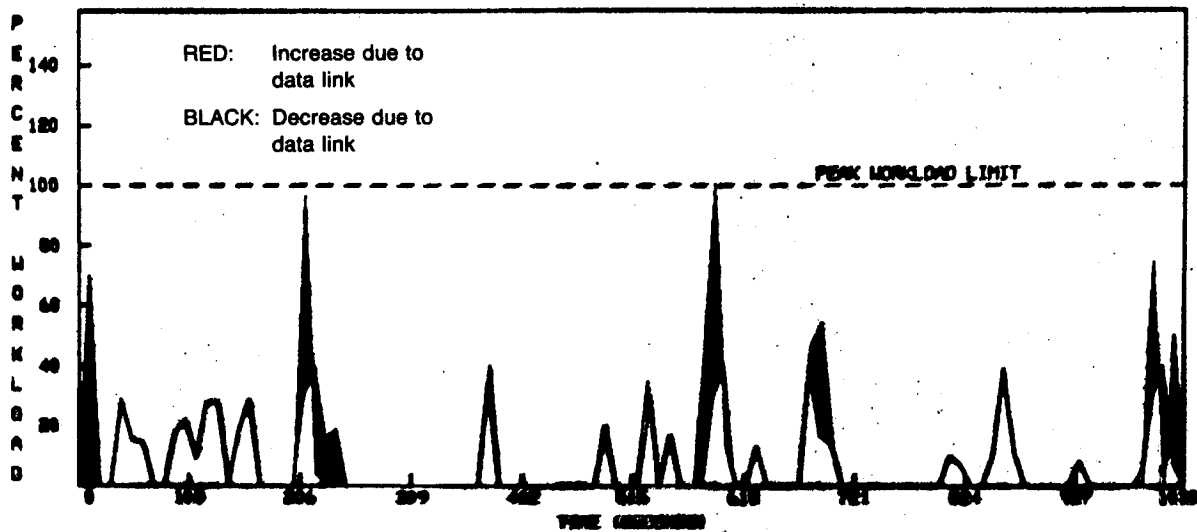


Figure C-22. Advanced Flight Deck, Copilot Tasking, Verbal Channel Normal ILS Approach

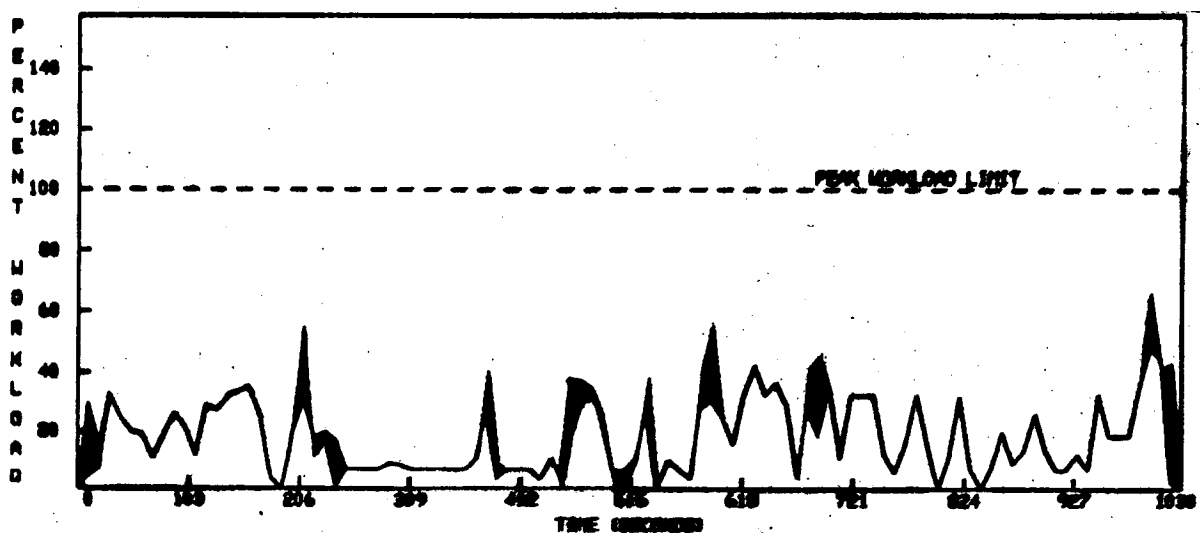


Figure C-23. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average Normal ILS Approach



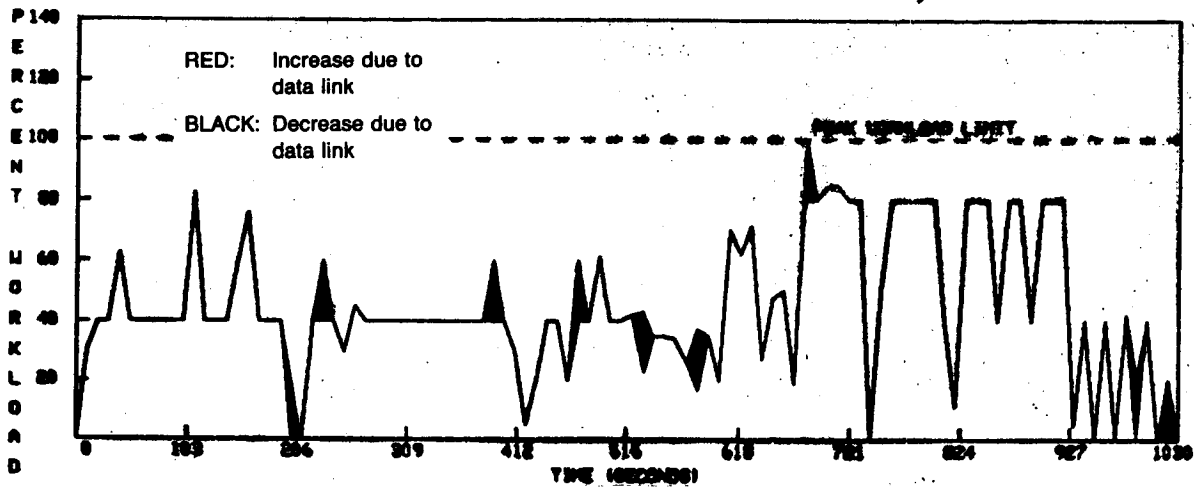


Figure C-24. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

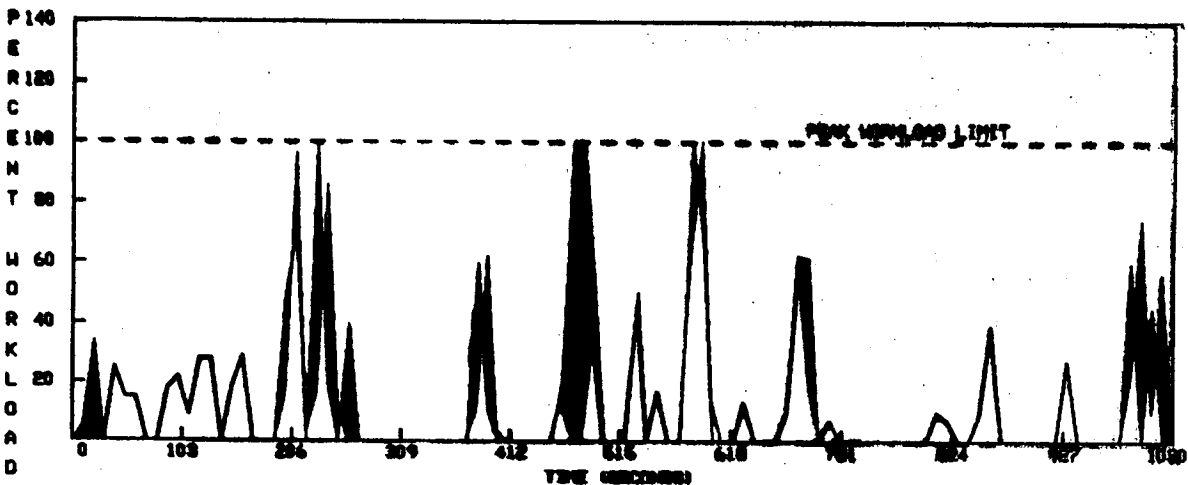


Figure C-25. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With Weather Deviation

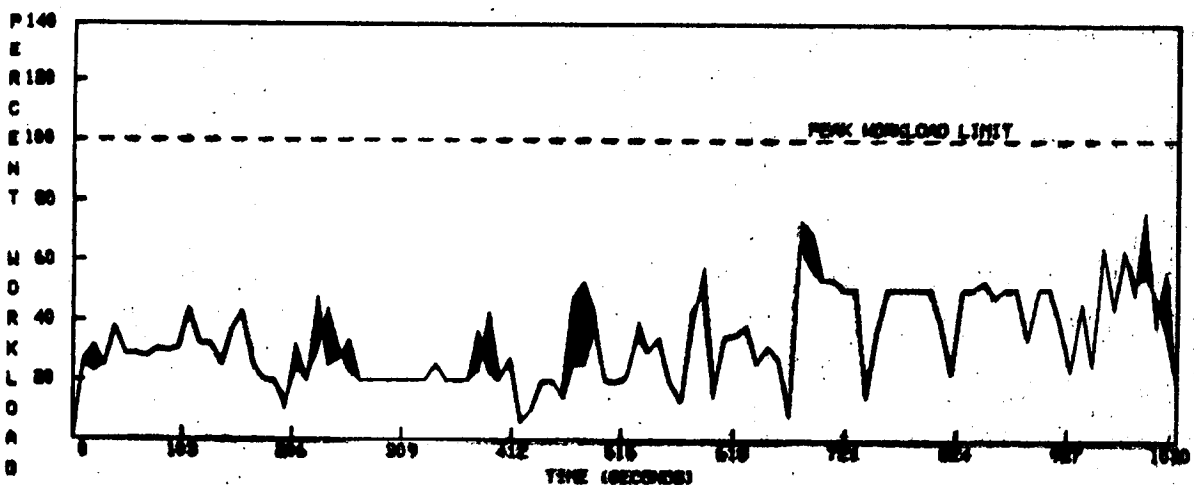


Figure C-26. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

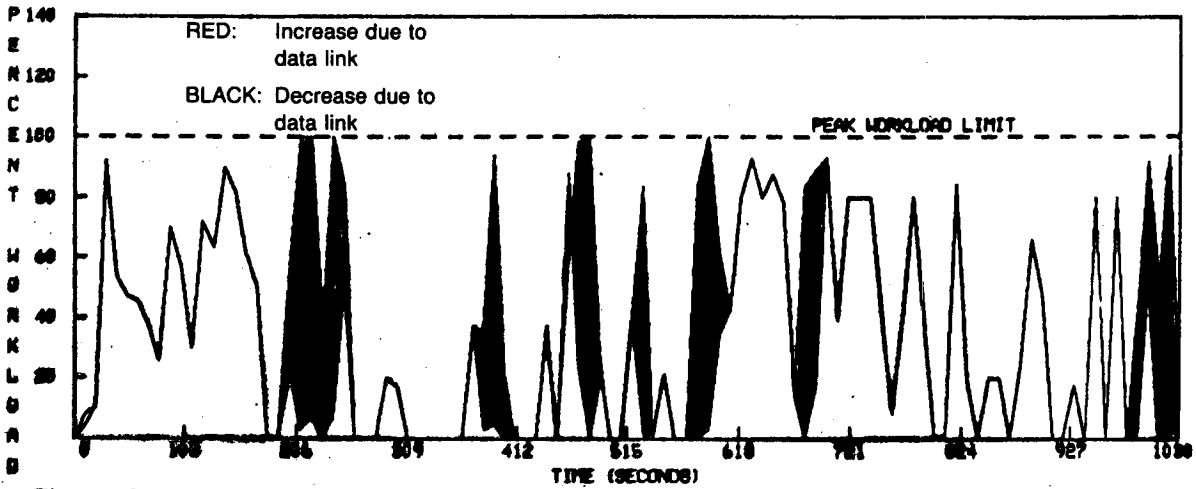


Figure C-27. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

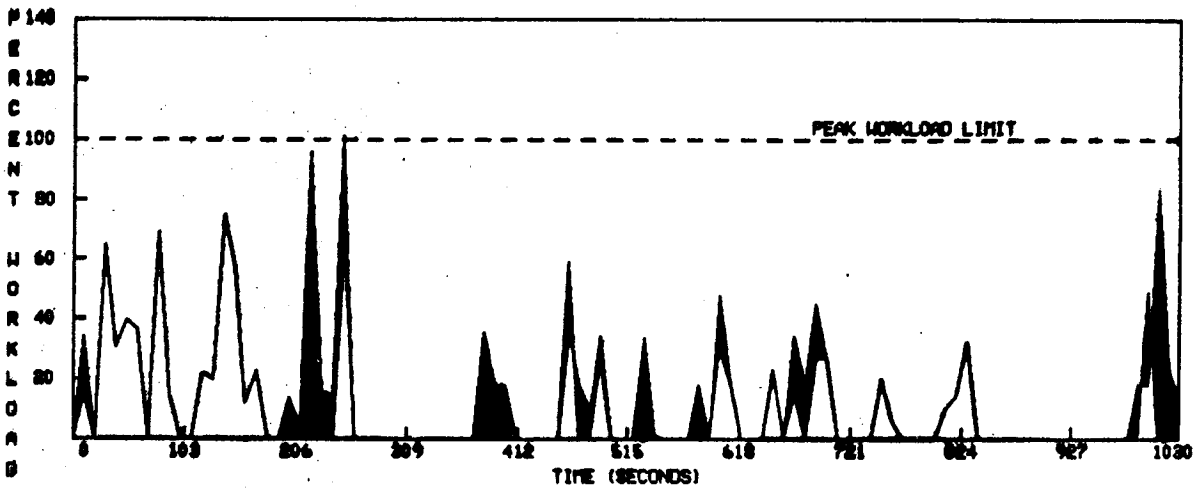


Figure C-28. Conventional Flight Deck, Copilot Tasking, Left Hand Channel ILS Approach With Weather Deviation

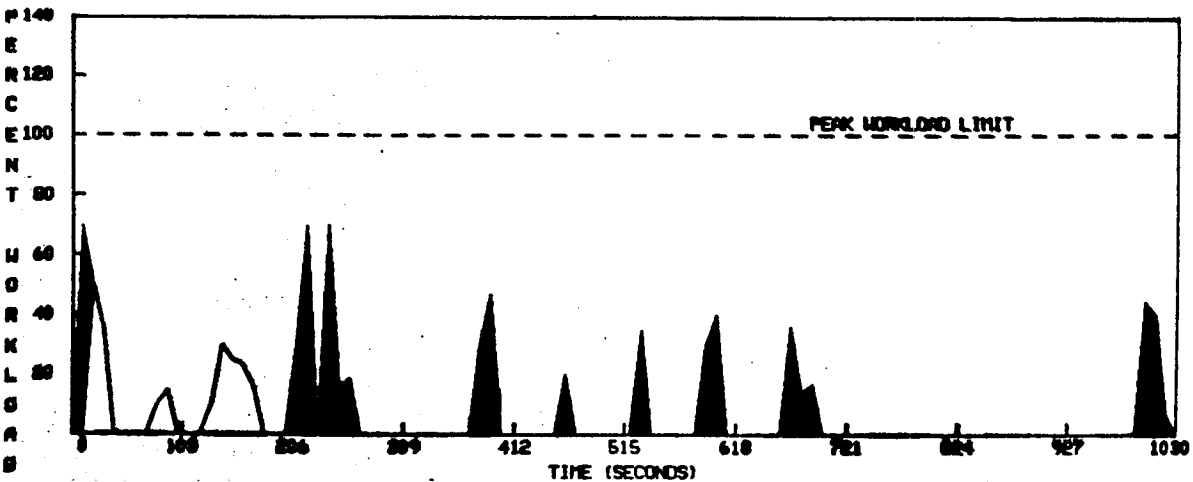


Figure C-29. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

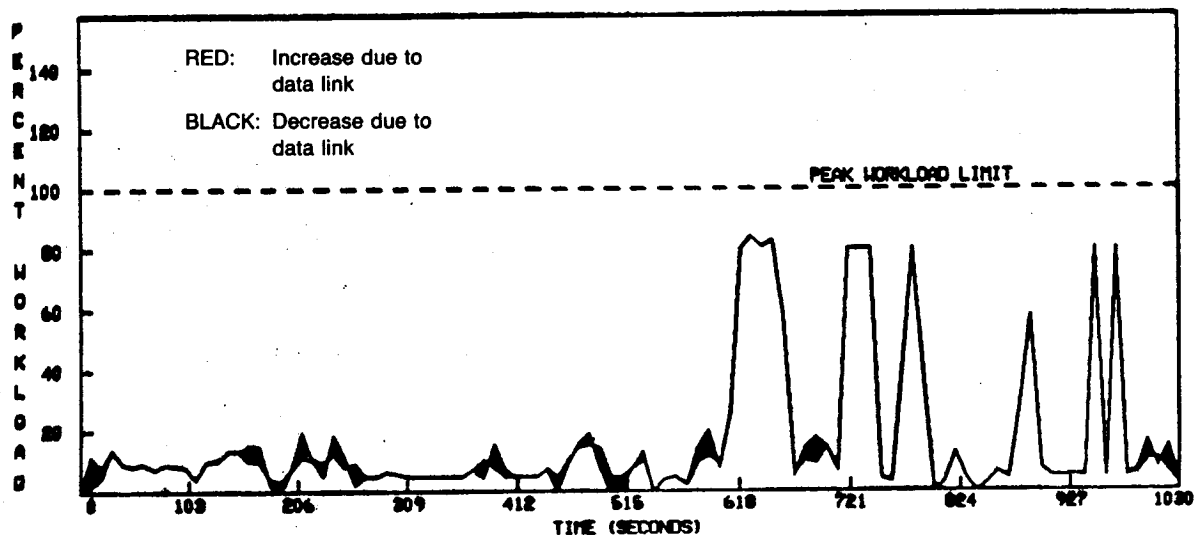


Figure C-30. Conventional Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With Weather Deviation

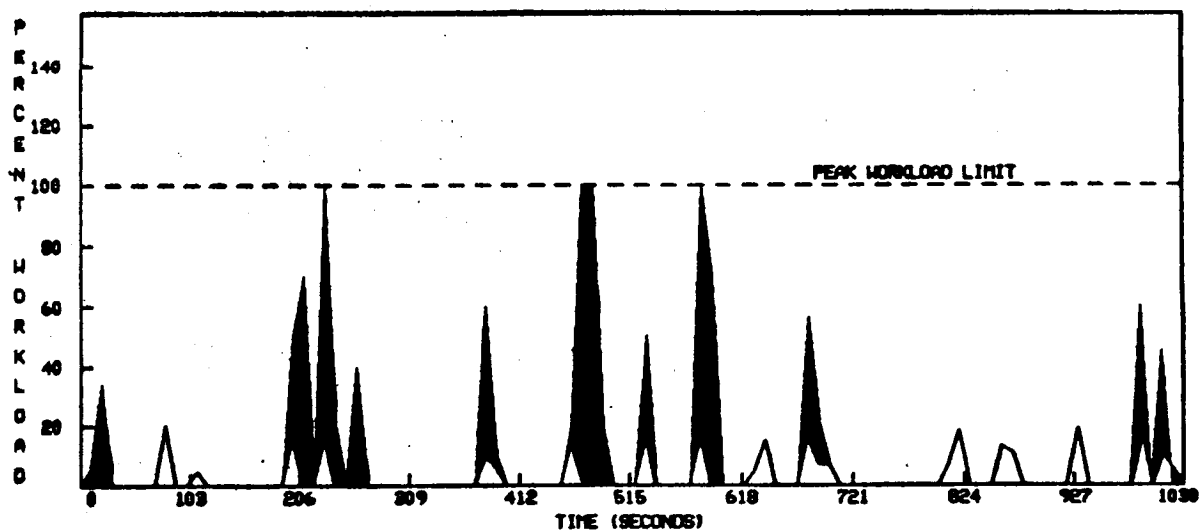


Figure C-31. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With Weather Deviation

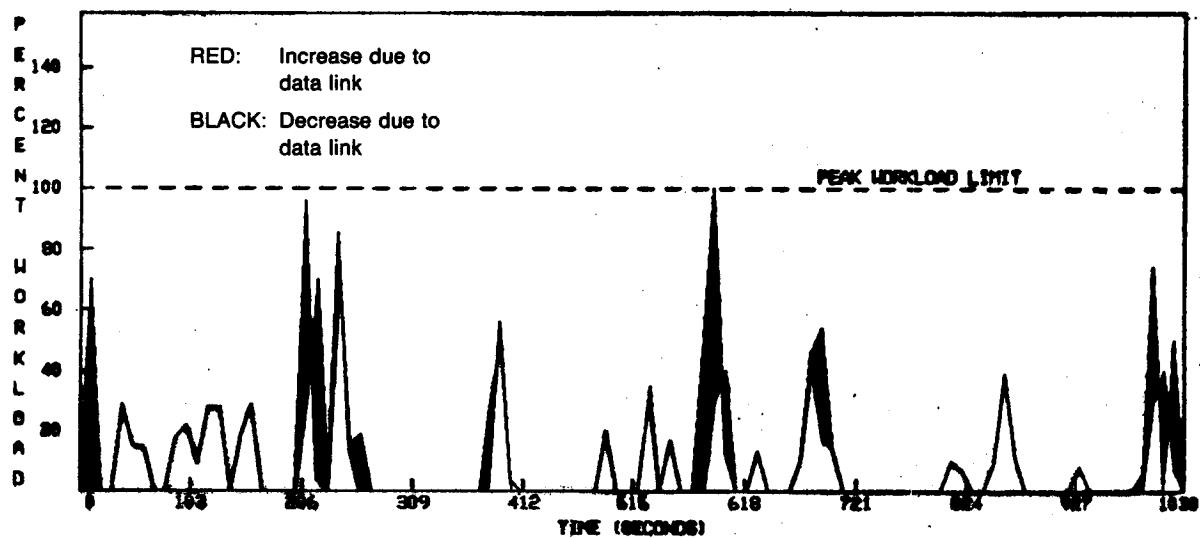


Figure C-32. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With Weather Deviation

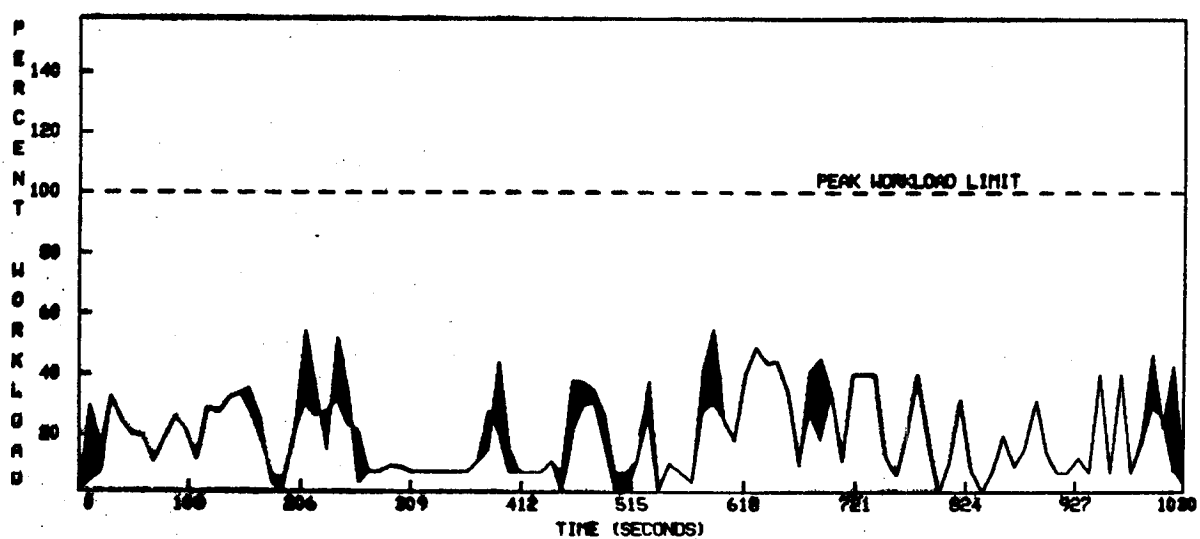


Figure C-33. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

C-4)

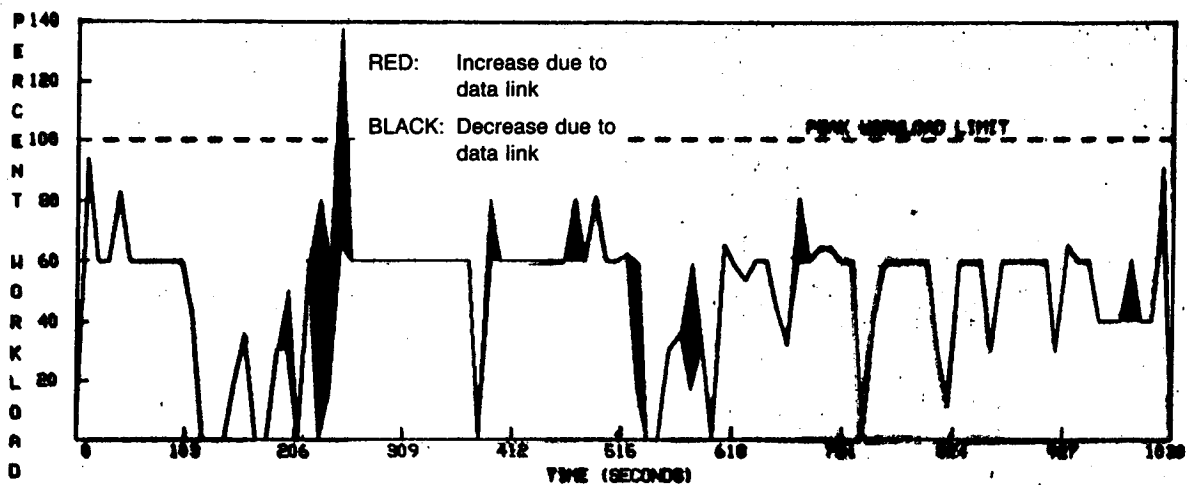


Figure C-34. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

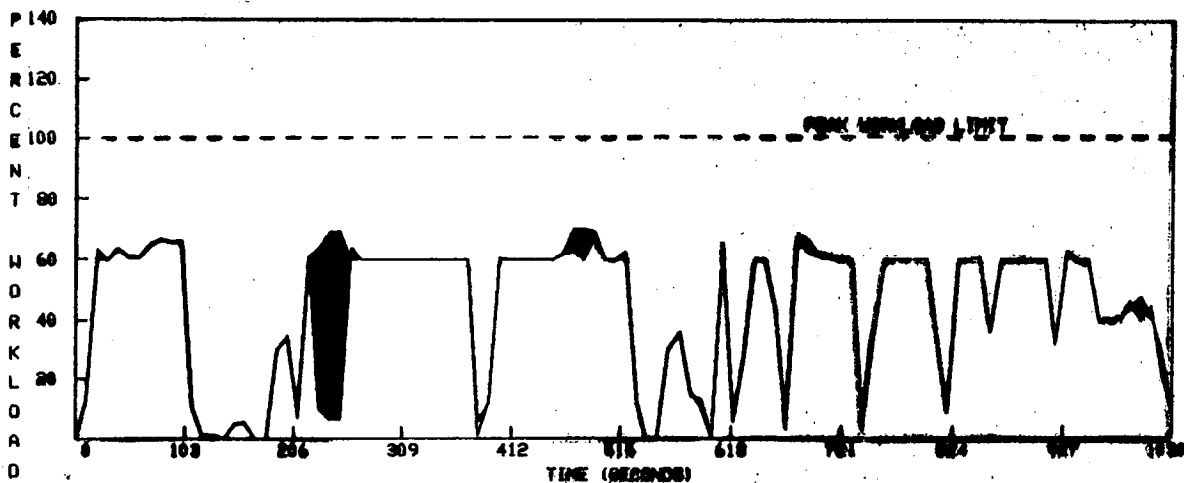


Figure C-35. Advanced Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With Weather Deviation

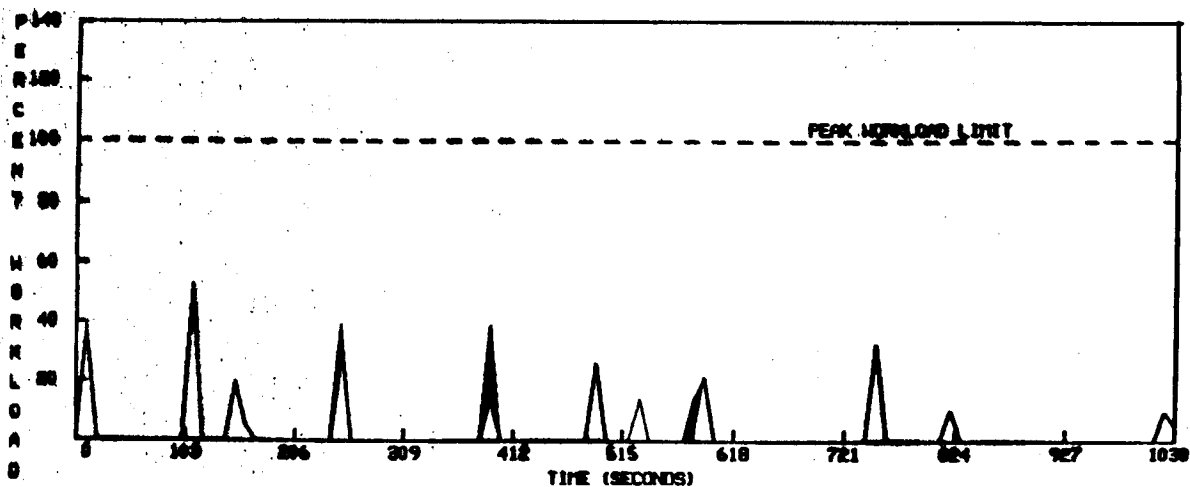


Figure C-36. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

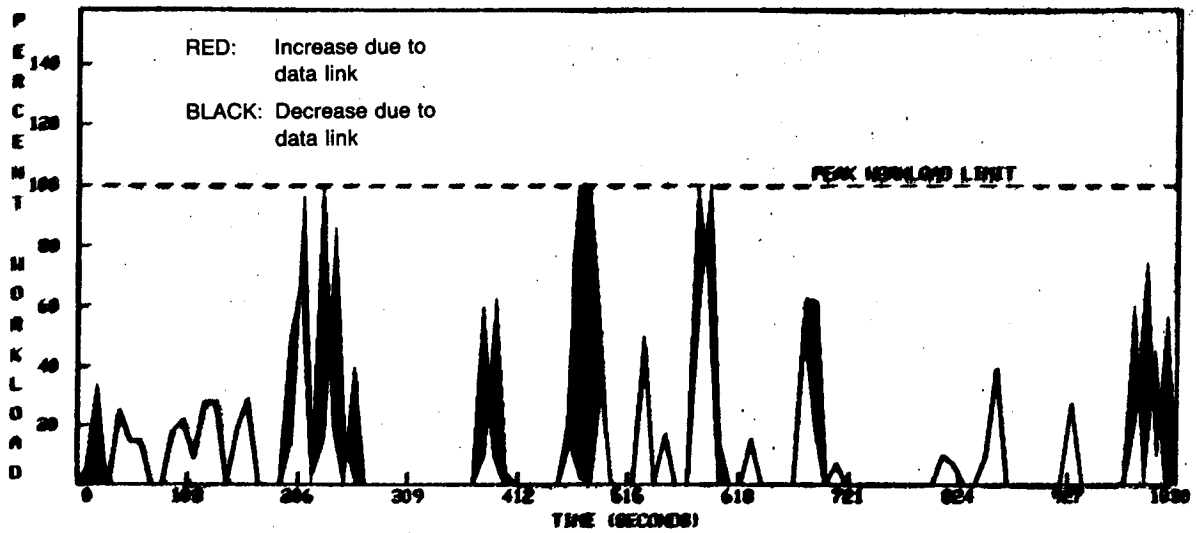


Figure C-37. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With Weather Deviation

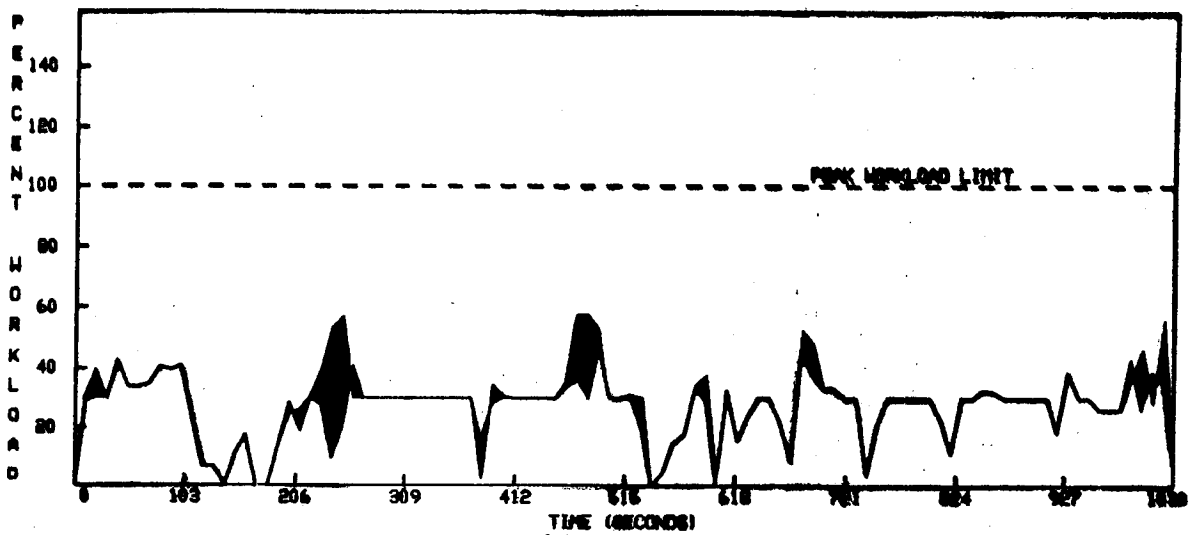


Figure C-38. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

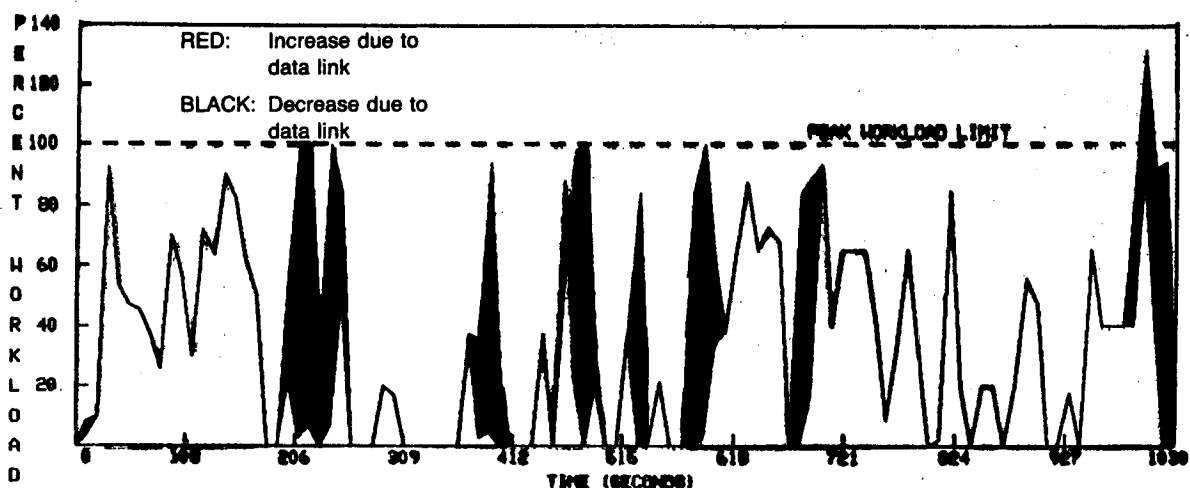


Figure C-39. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

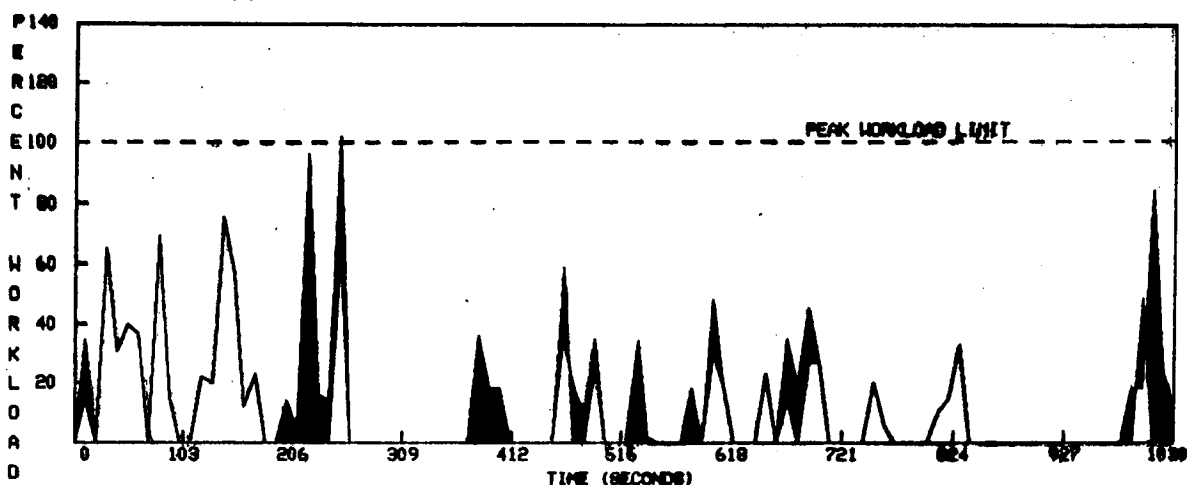


Figure C-40. Advanced Flight Deck, Copilot Tasking, Left Hand Channel ILS Approach With Weather Deviation

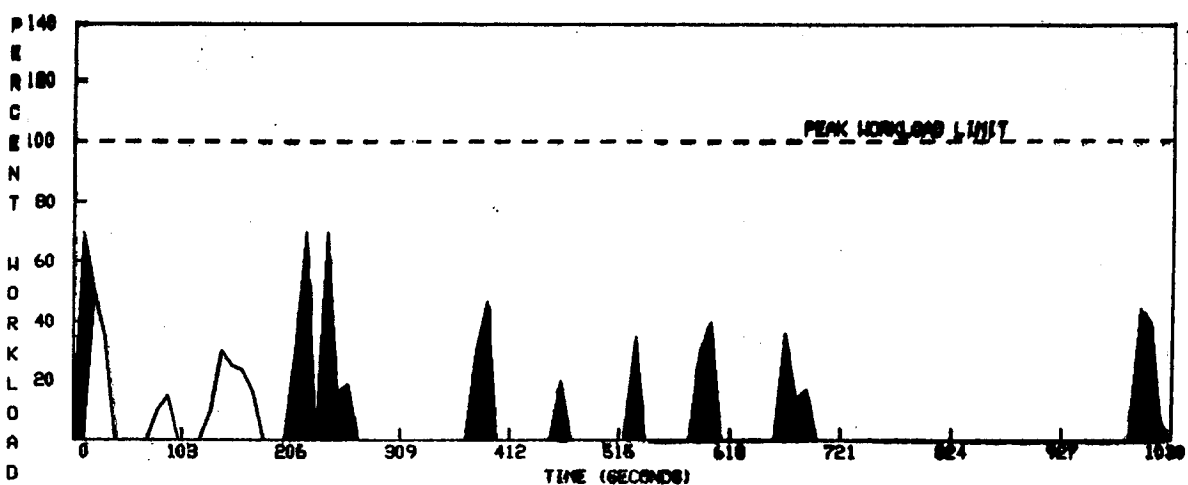


Figure C-41. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

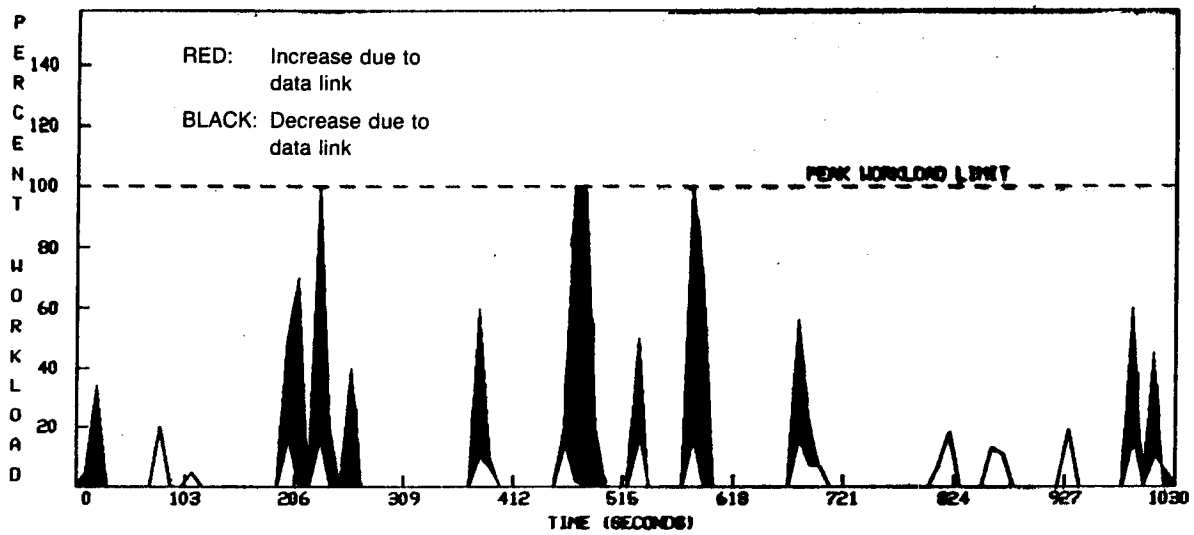


Figure C-42. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With Weather Deviation

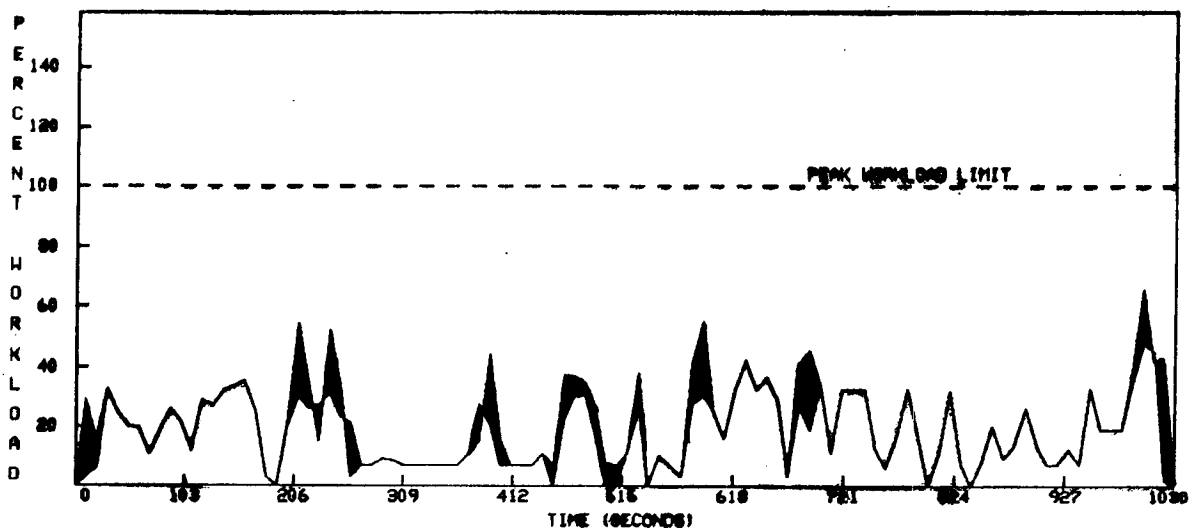


Figure C-43. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation



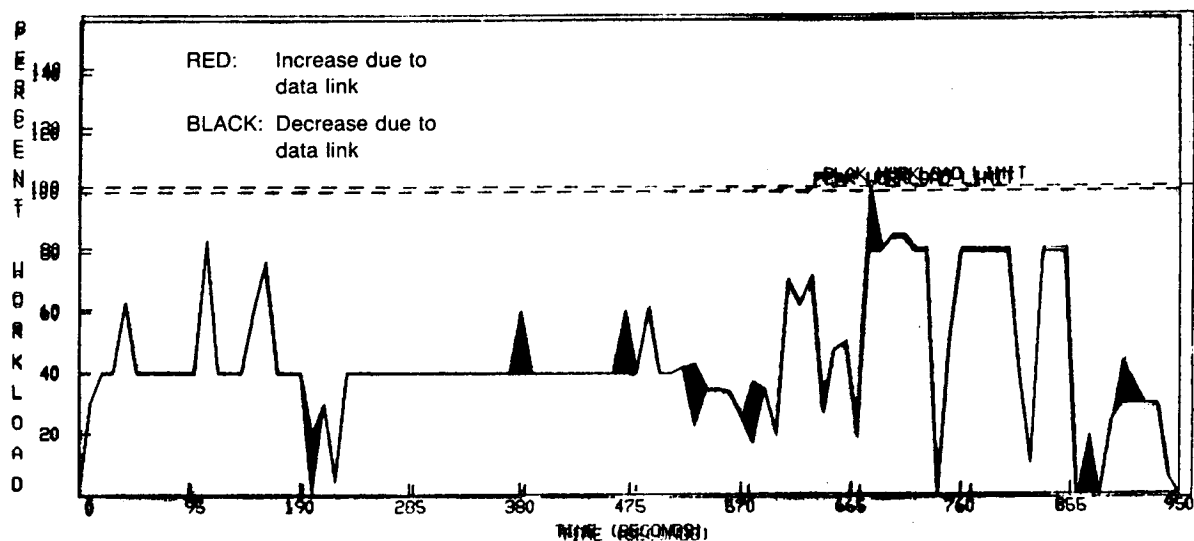


Figure C-44. Conventional Flight Deck, Pilot Tasking, Vision Internal Channel ILS Missed Approach With Reroute

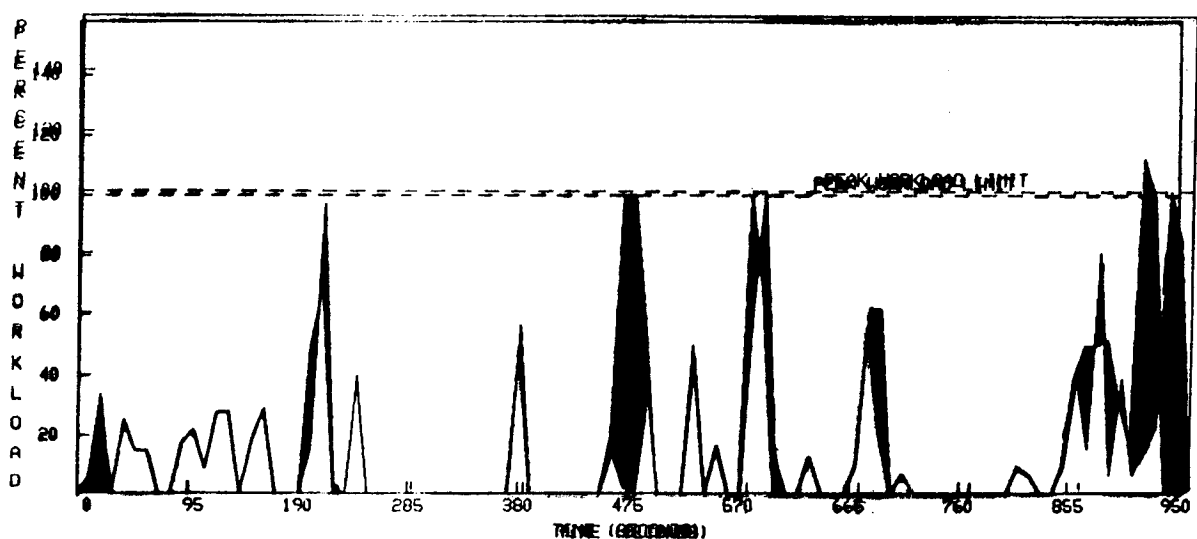


Figure C-45. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Missed Approach With Reroute

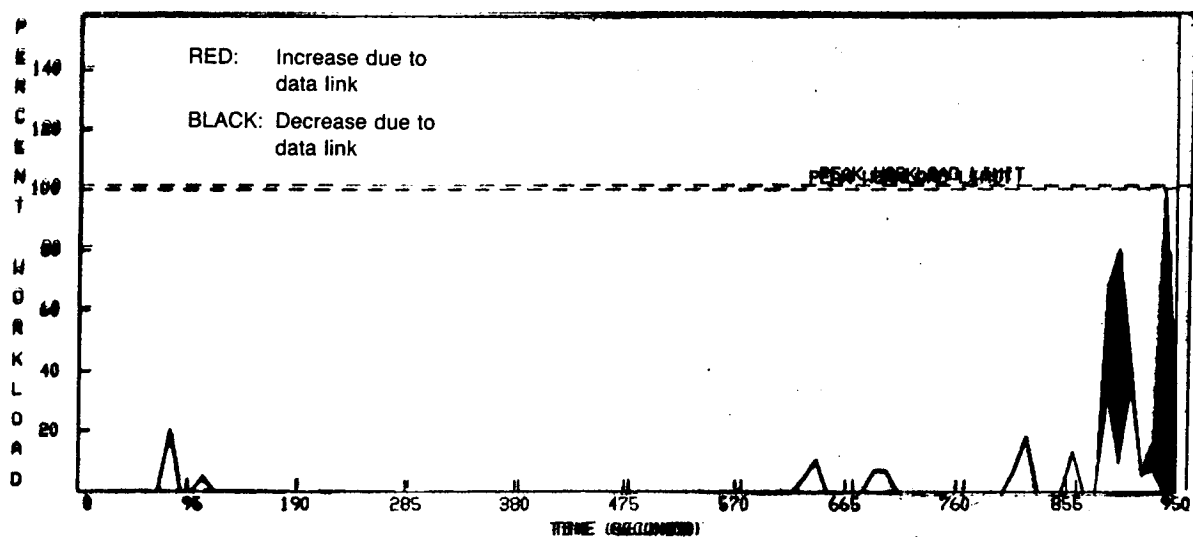


Figure C-46. Conventional Flight Deck, Pilot Tasking, Verbal Channel ILS Missed Approach With Reroute

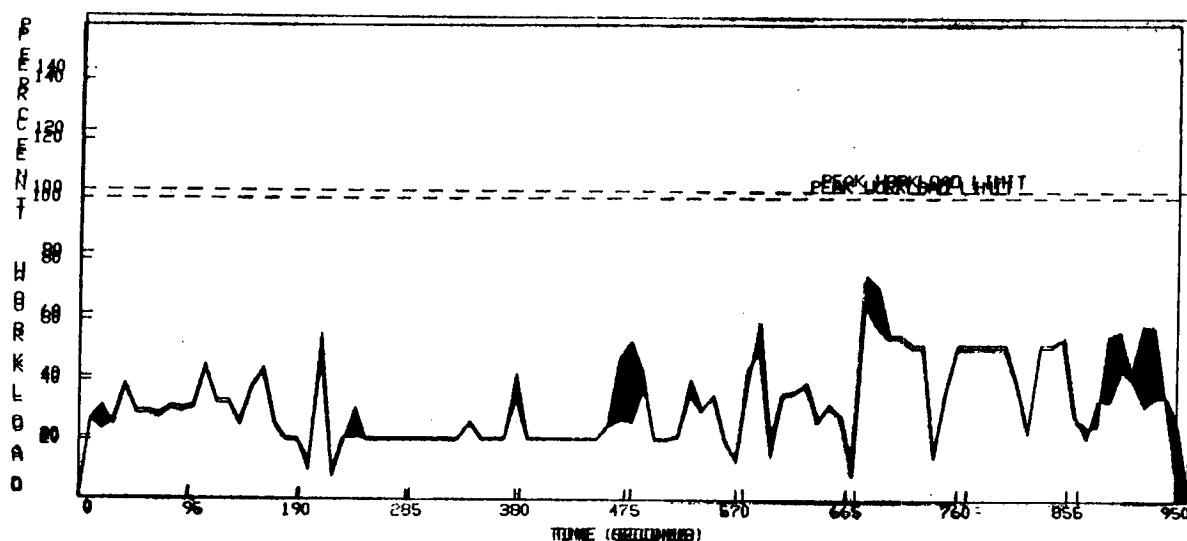


Figure C-47. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

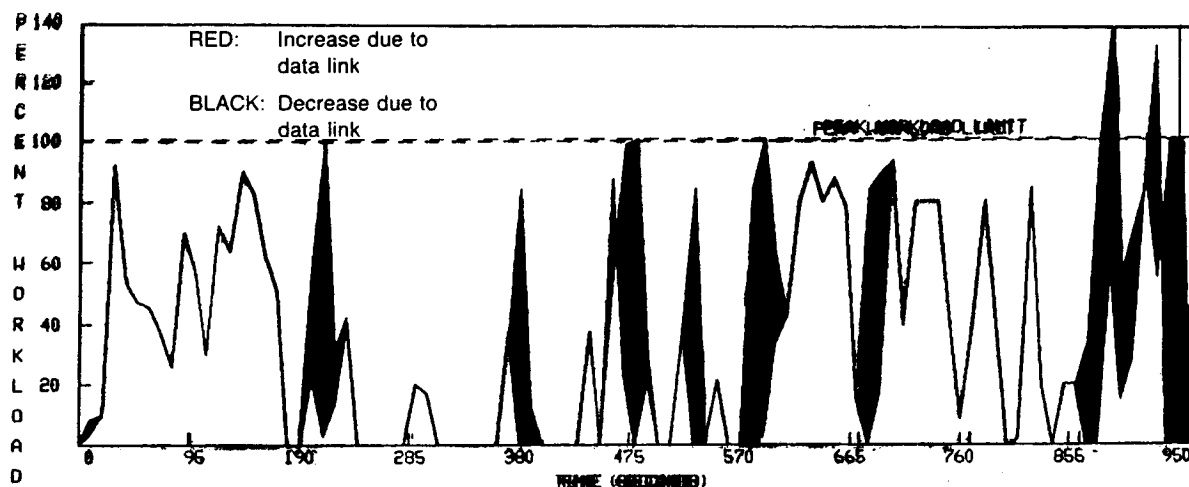


Figure C-48. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

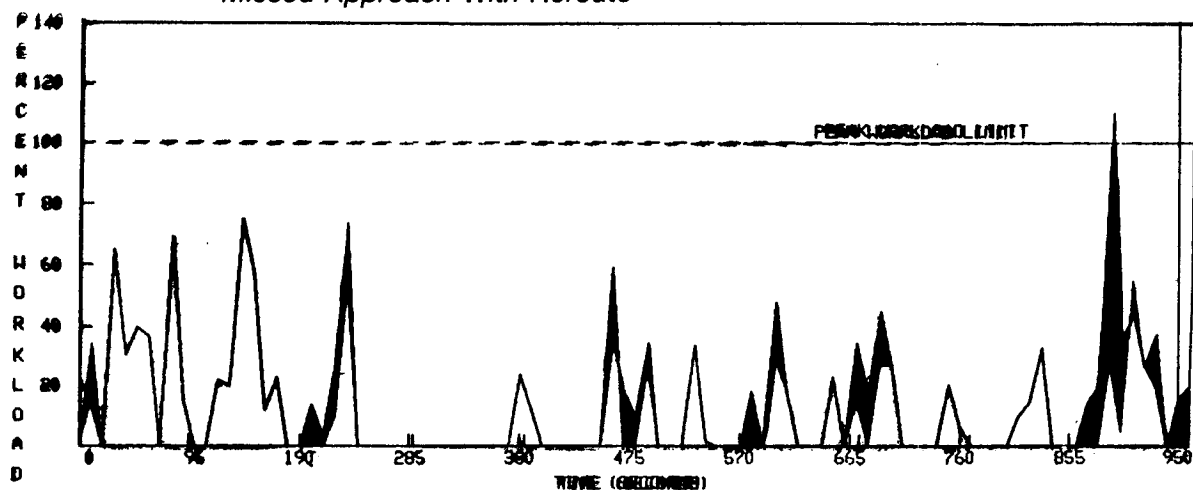


Figure C-49. Conventional Flight Deck, Copilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

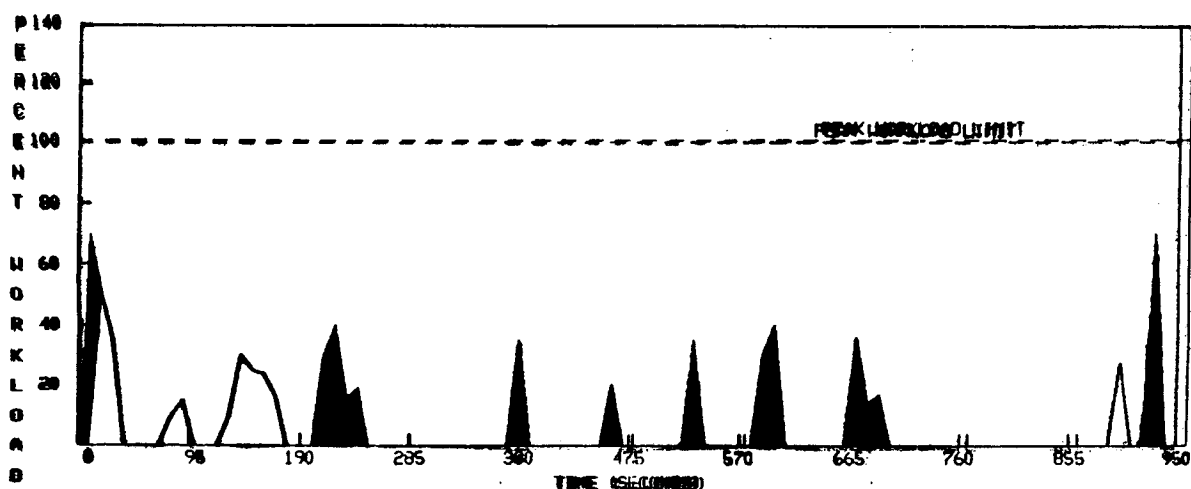


Figure C-50. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

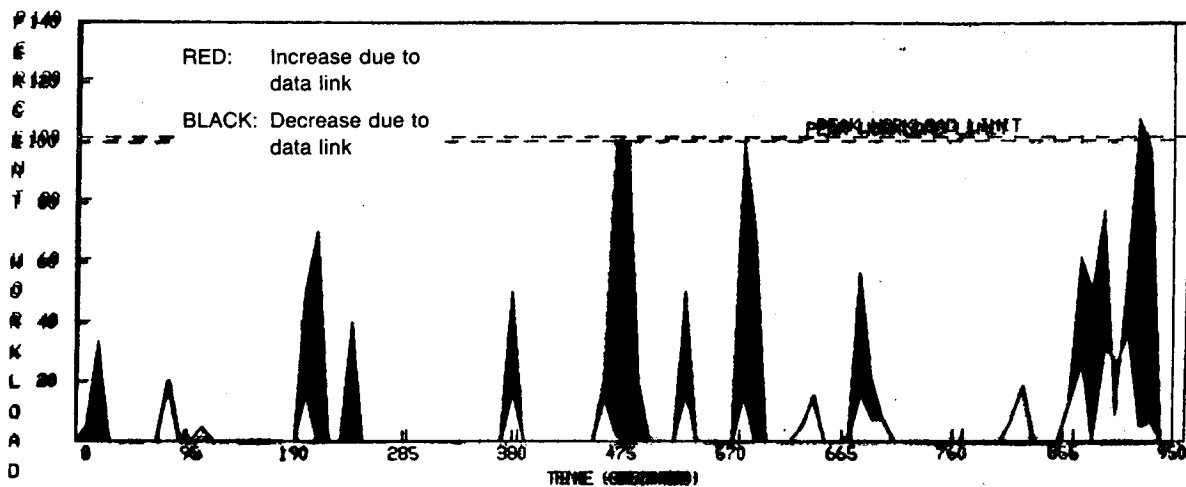


Figure C-51. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Missed Approach With Reroute

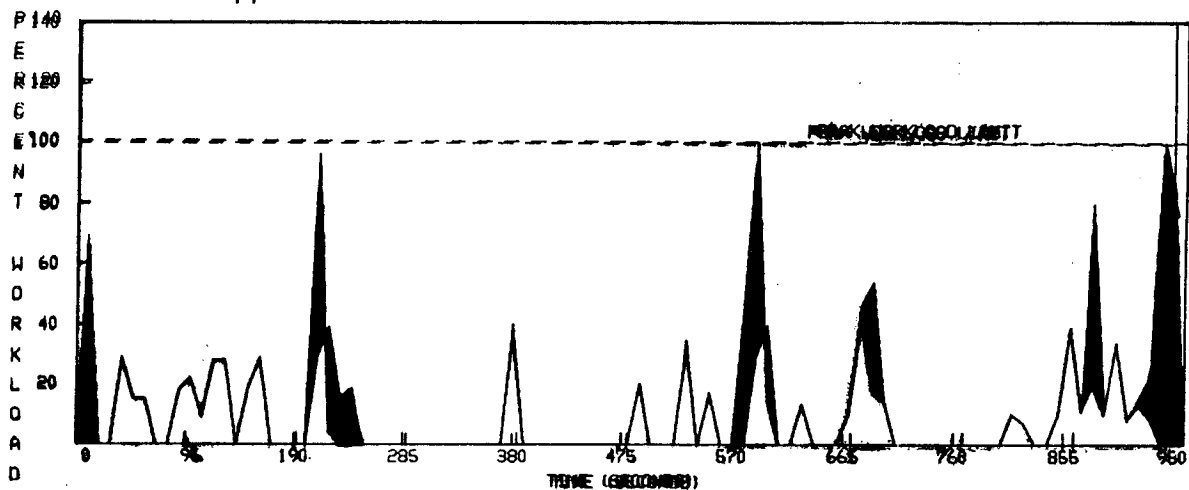


Figure C-52. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Missed Approach With Reroute

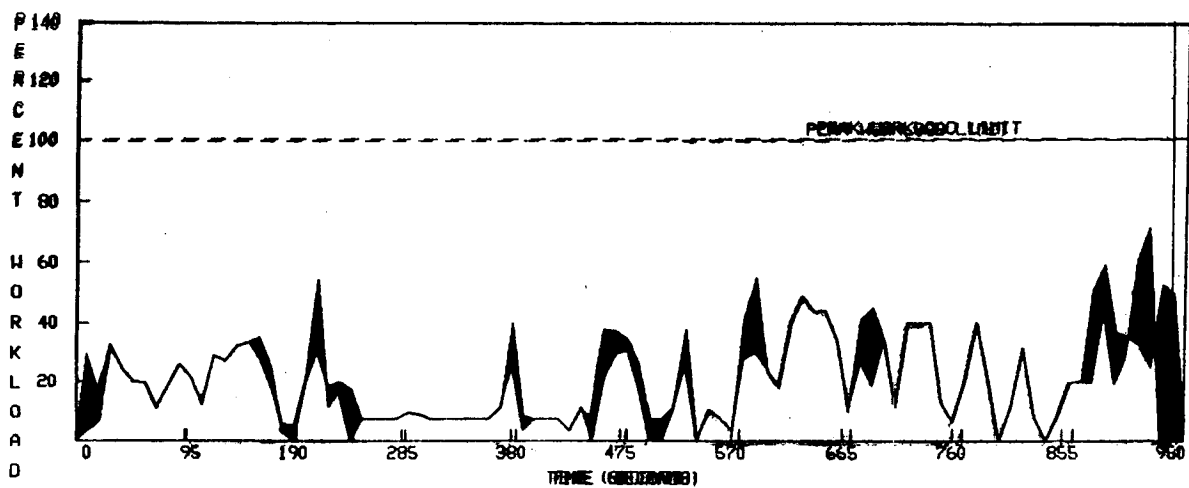


Figure C-53. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

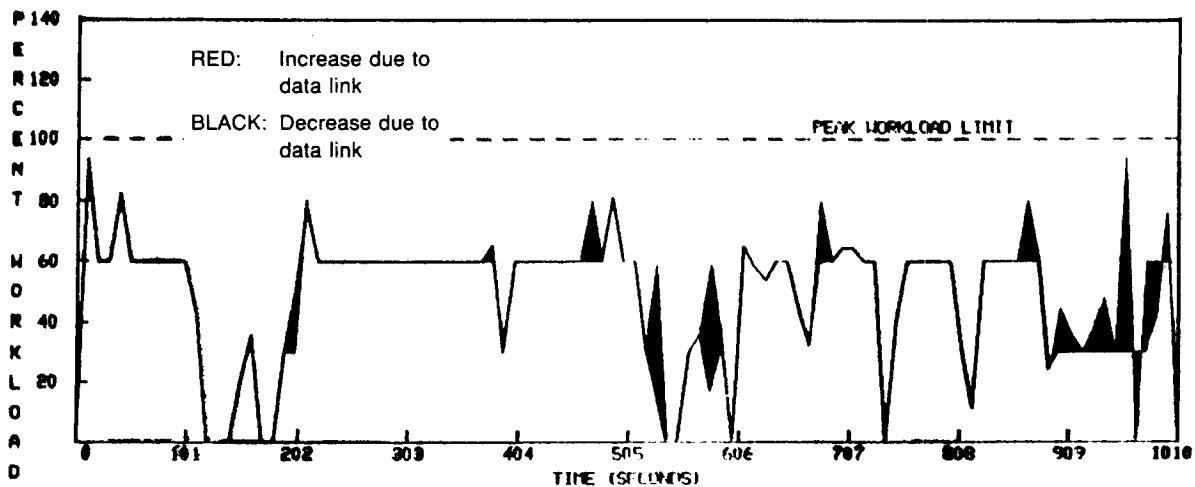


Figure C-54. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

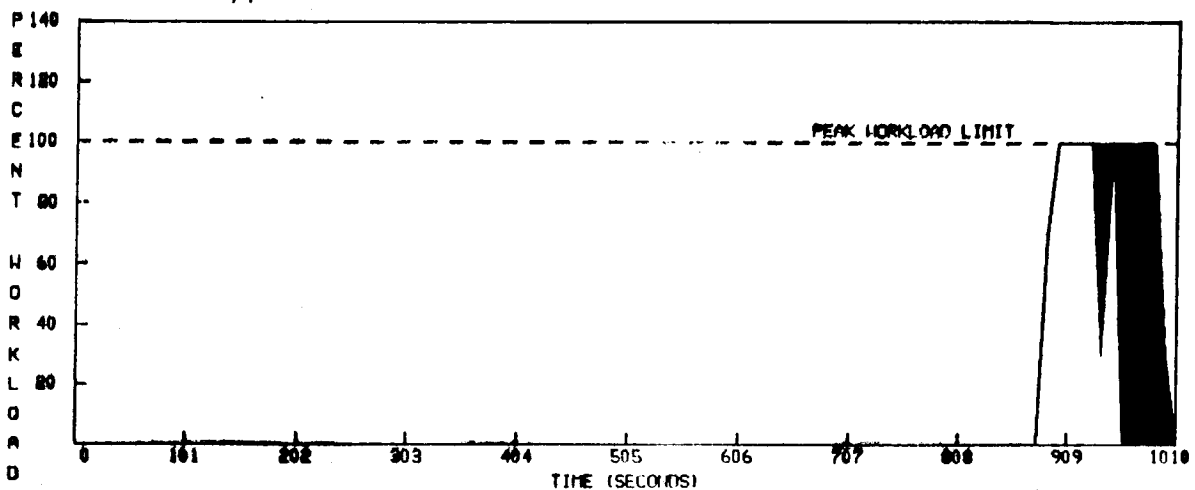


Figure C-55. Advanced Flight Deck, Pilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

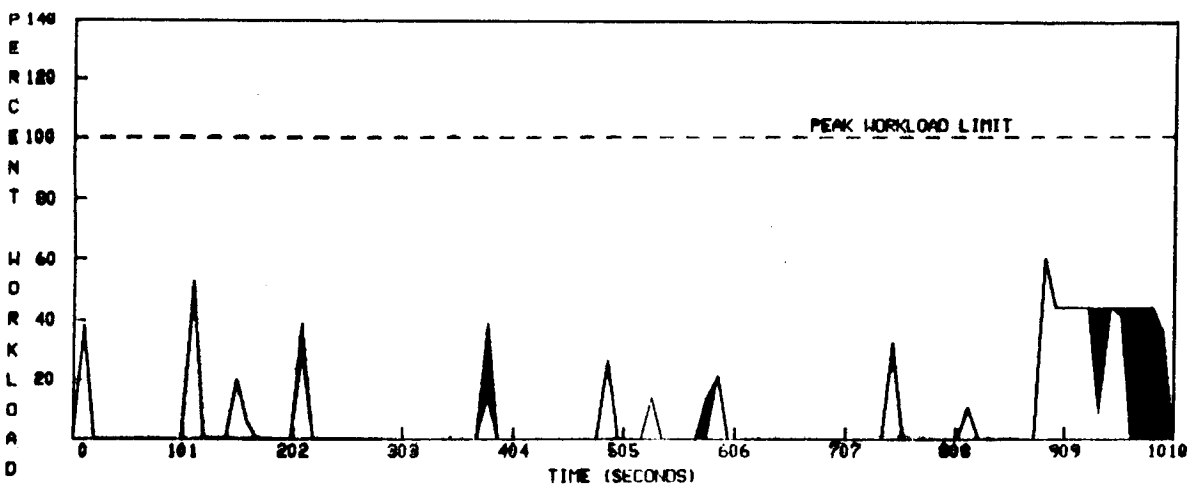


Figure C-56. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

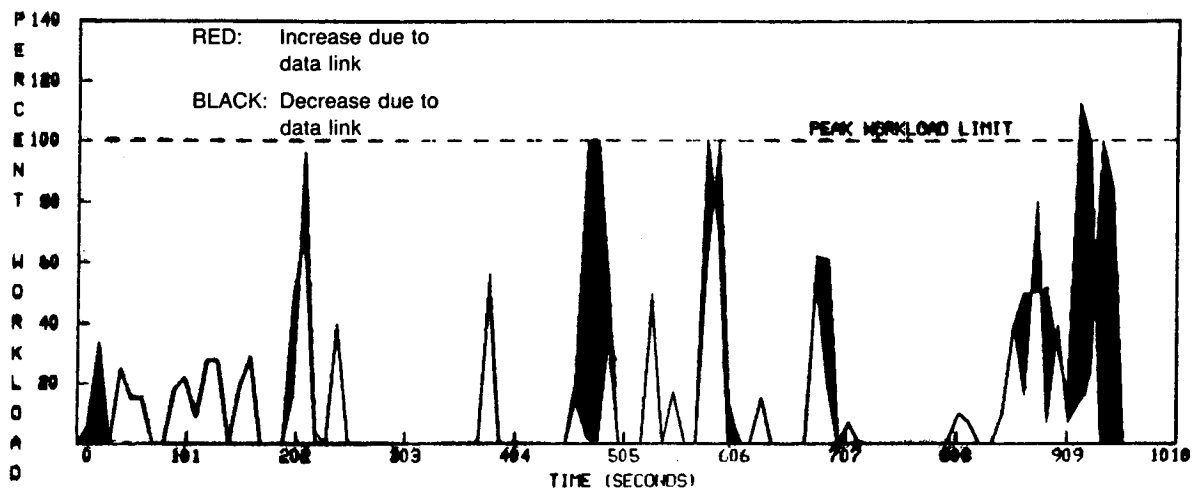


Figure C-57. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Missed Approach With Reroute

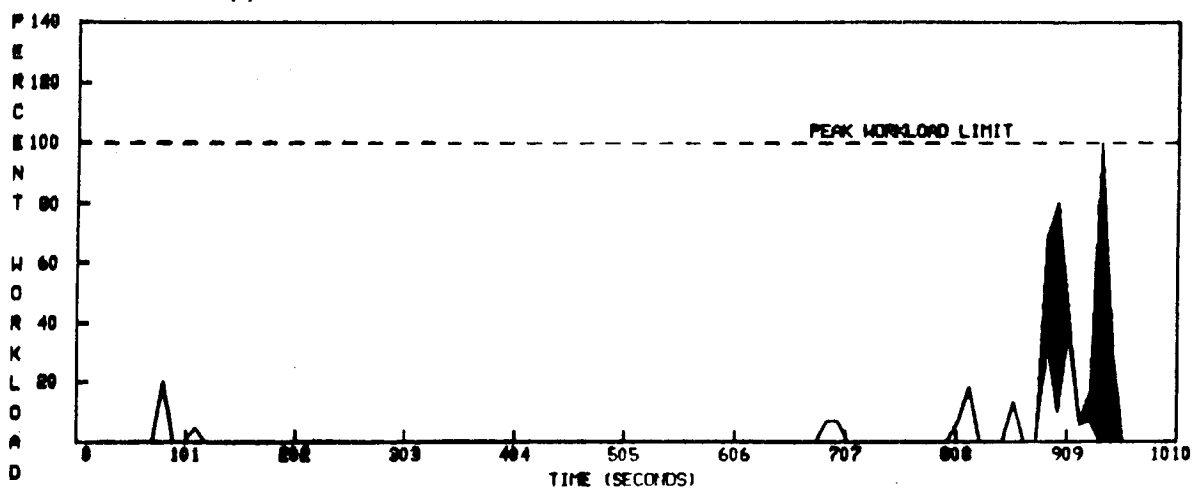


Figure C-58. Advanced Flight Deck, Pilot Tasking, Verbal Channel ILS Missed Approach With Reroute

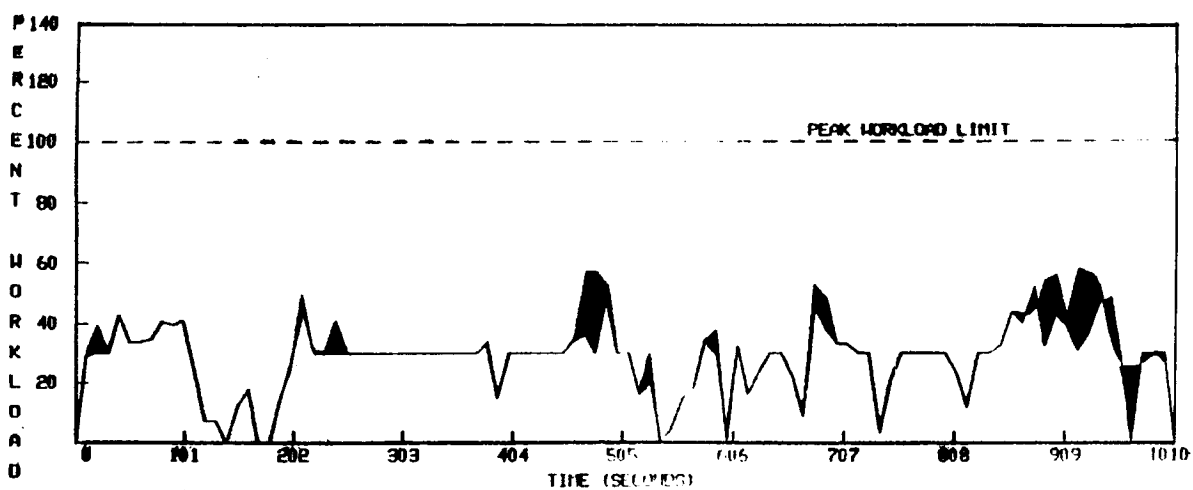


Figure C-59. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

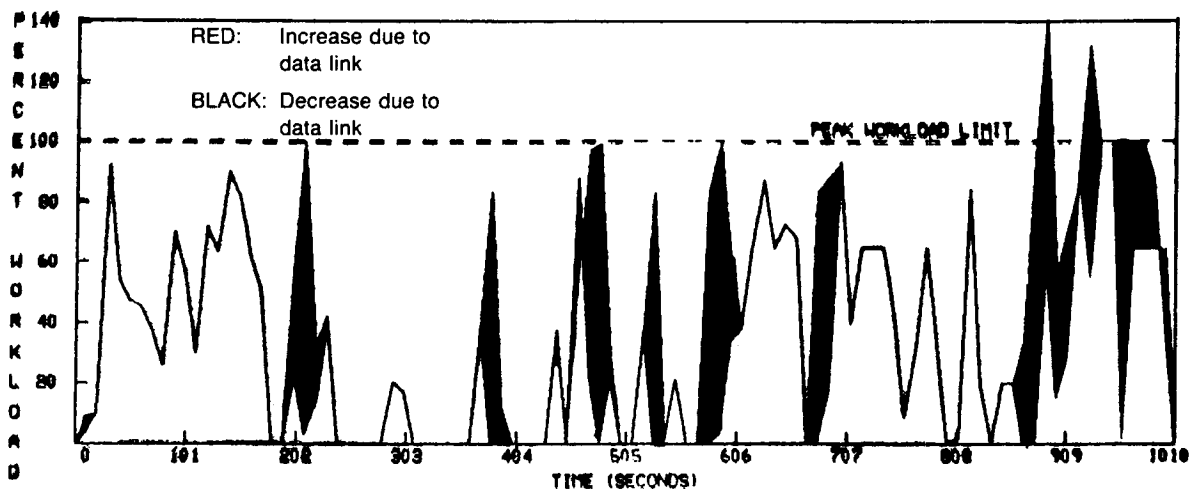


Figure C-60. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

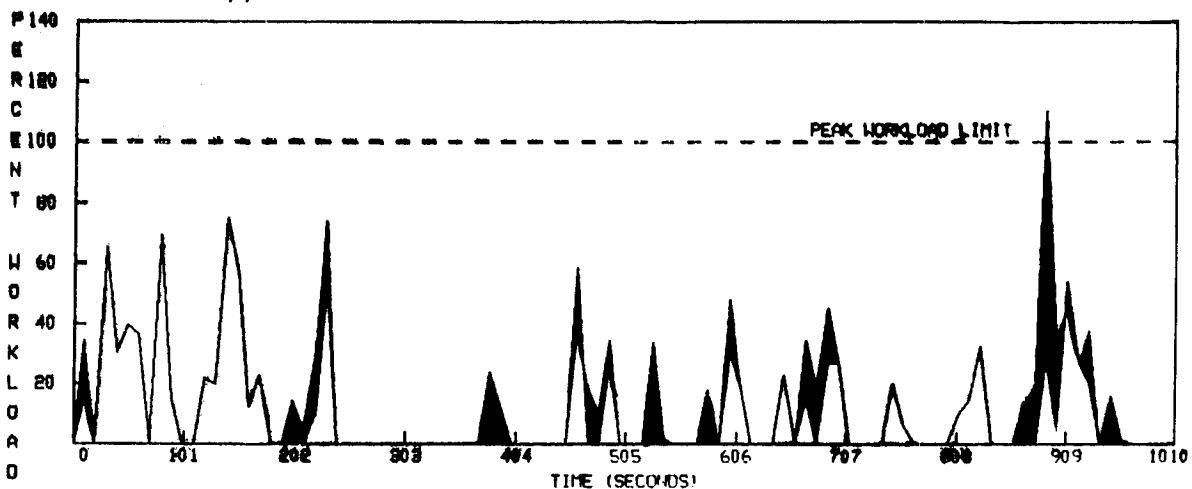


Figure C-61. Advanced Flight Deck, Copilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

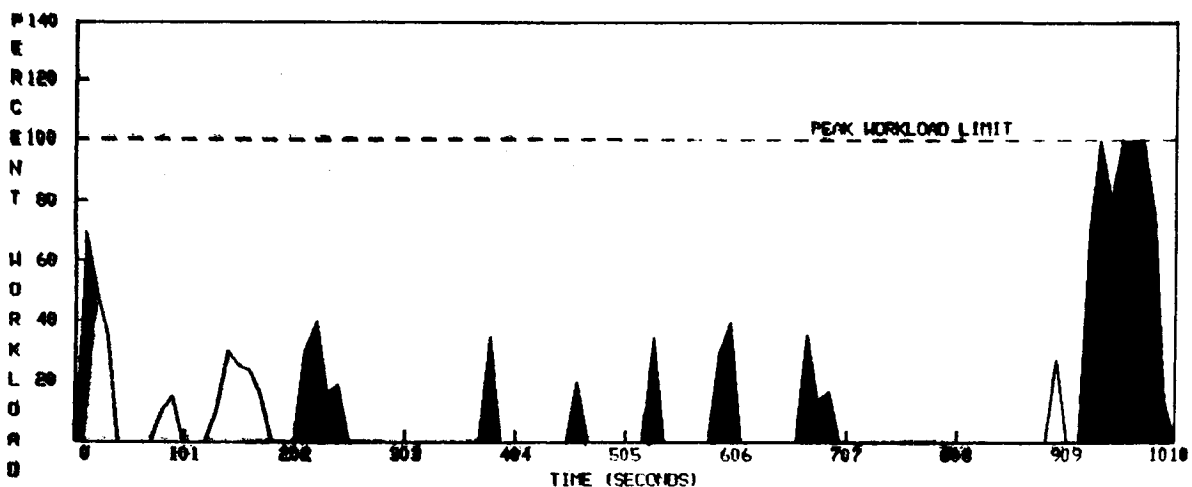


Figure C-62. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

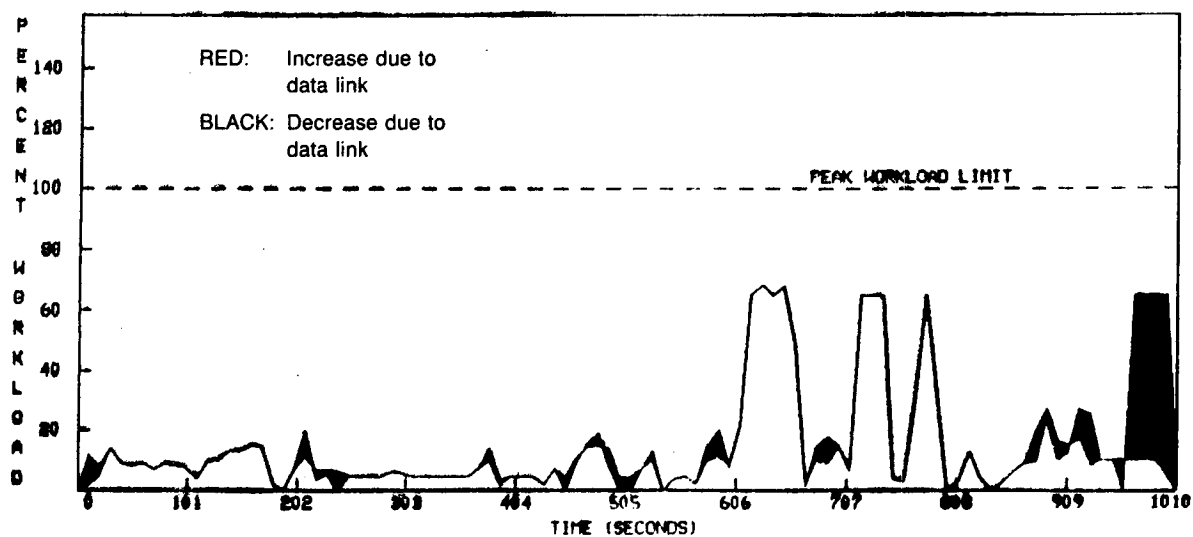


Figure C-63. Advanced Flight Deck, Copilot Tasking, Cognitive Channel ILS Missed Approach With Reroute

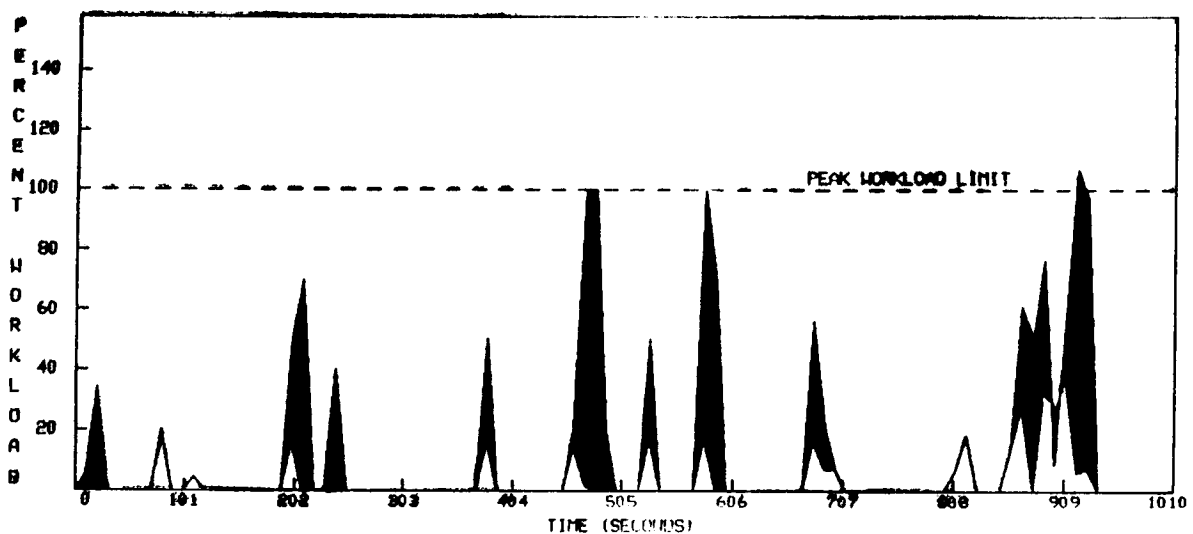


Figure C-64. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Missed Approach With Reroute



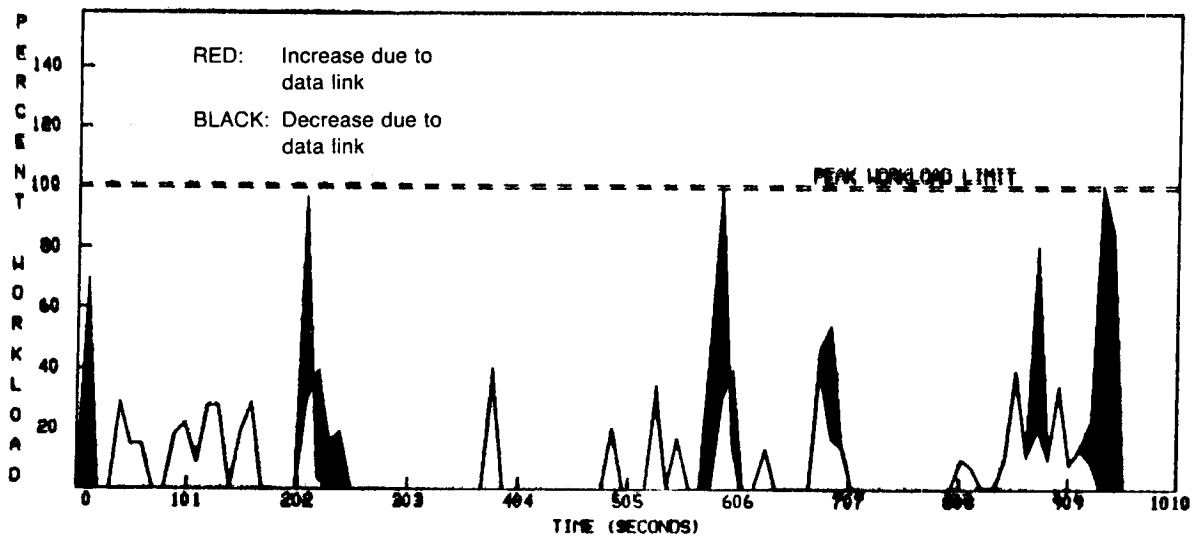


Figure C-65. Advanced Flight Deck, Copilot Tasking, Verbal Channel ILS Missed Approach With Reroute

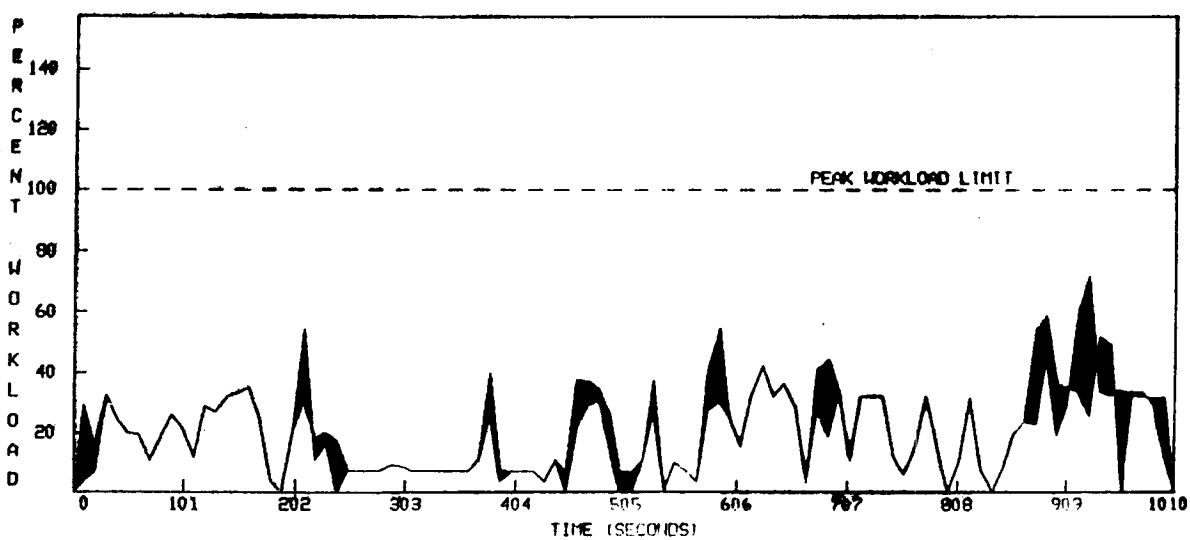


Figure C-66. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

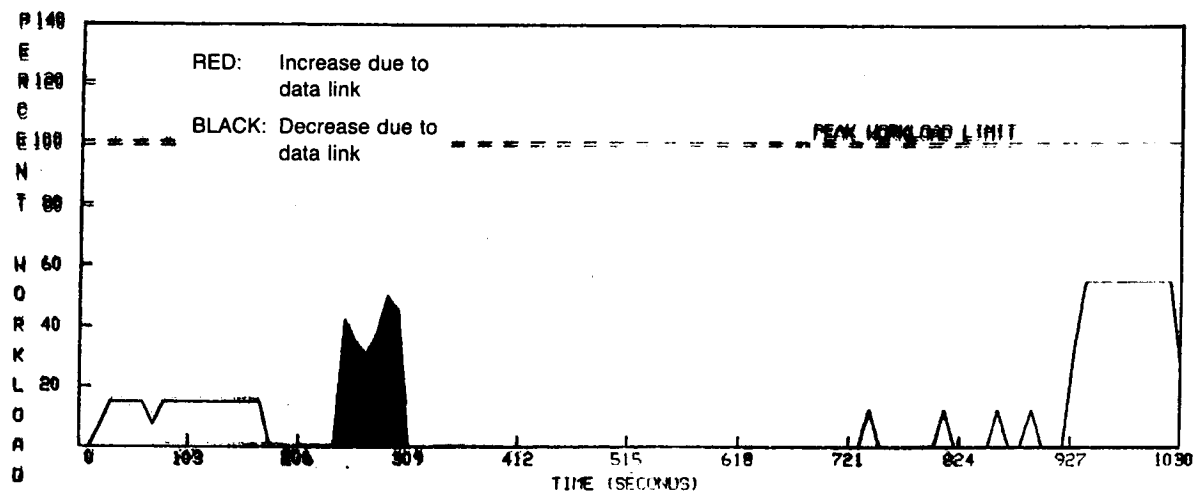


Figure C-67. Conventional Flight Deck, Pilot Tasking, External Vision Channel ILS Approach With TCAS Encounter

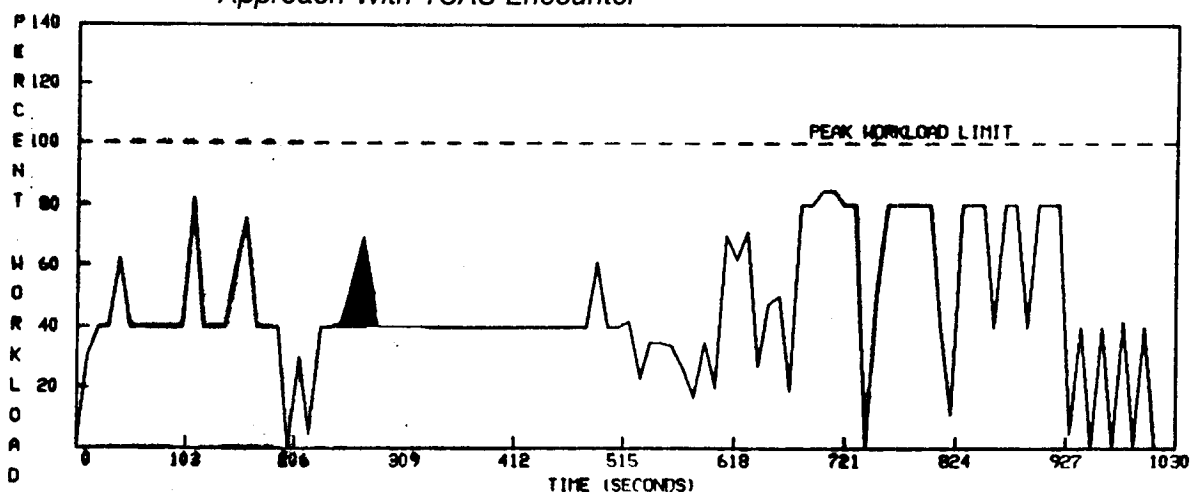


Figure C-68. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

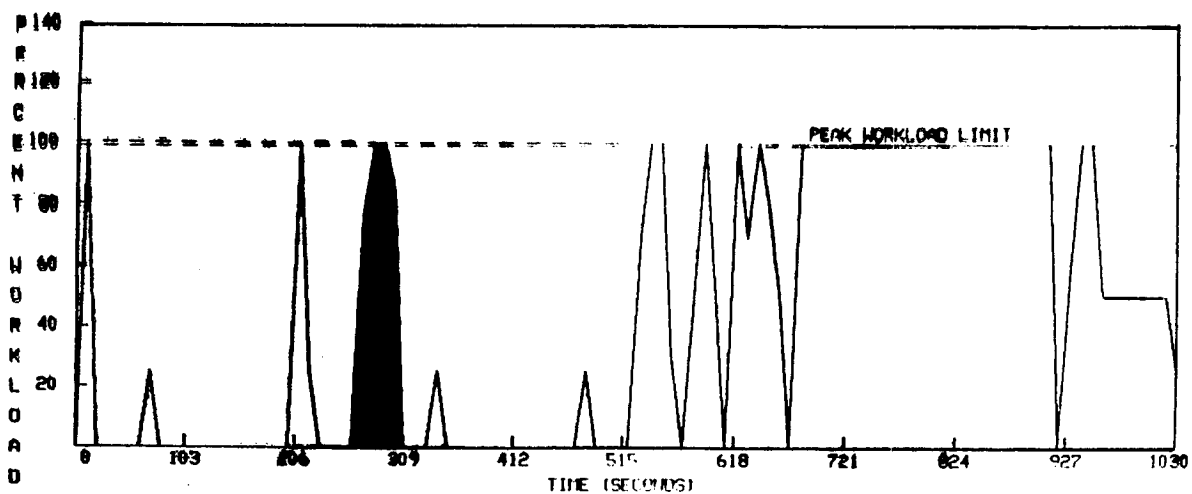


Figure C-69. Conventional Flight Deck, Pilot Tasking, Left Hand Channel ILS Approach With TCAS Encounter

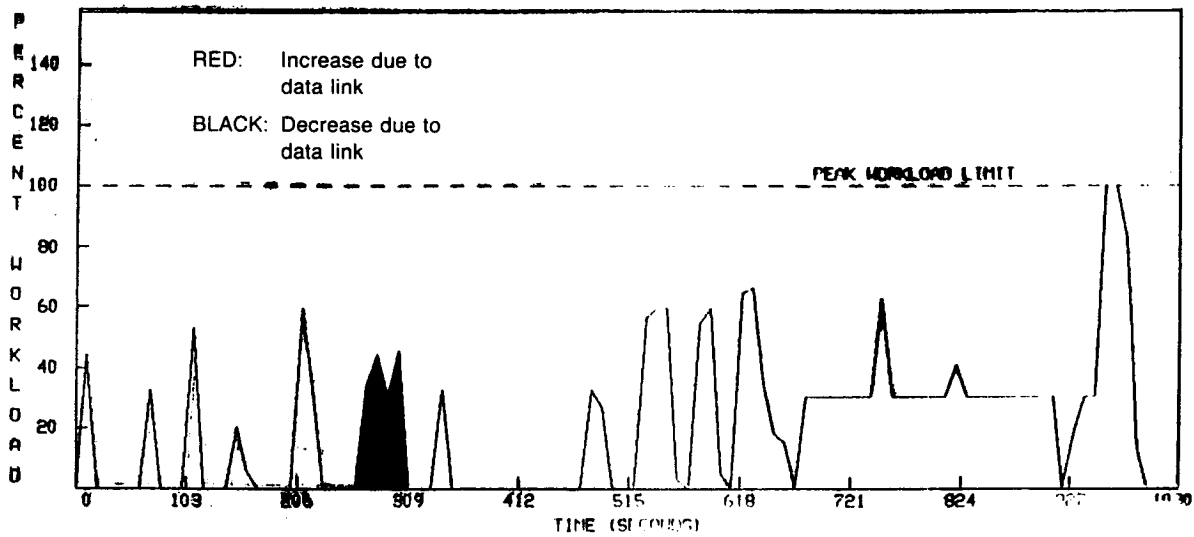


Figure C-70. Conventional Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

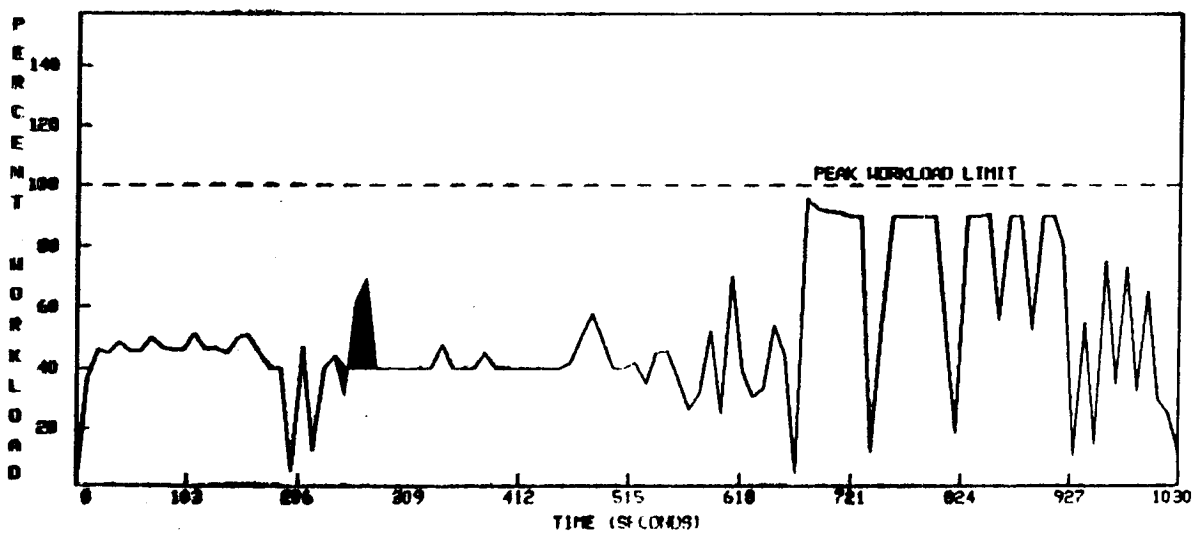


Figure C-71. Conventional Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

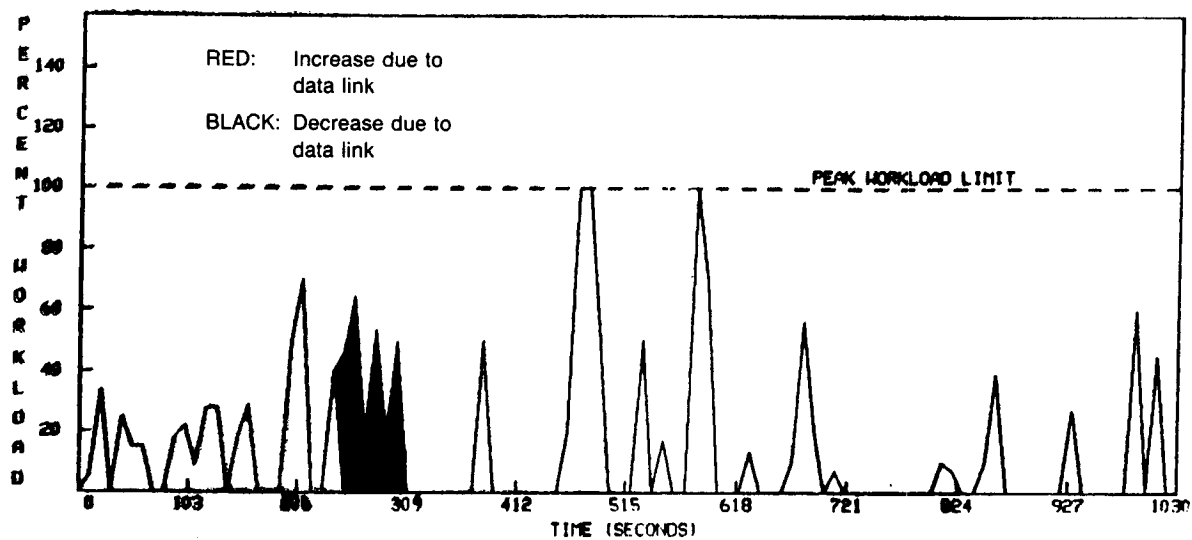


Figure C-72. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

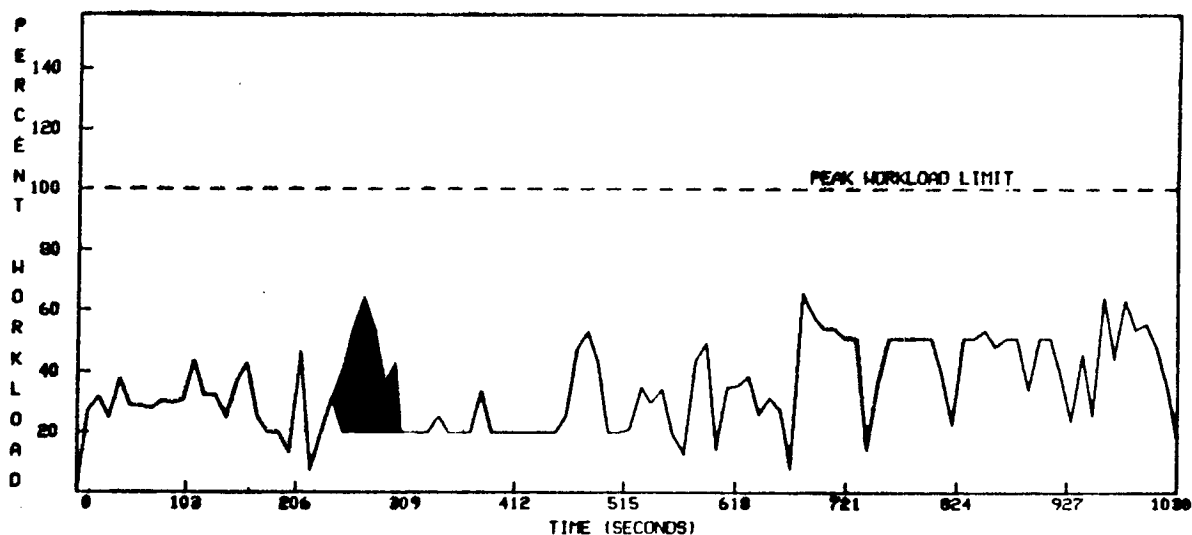


Figure C-73. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

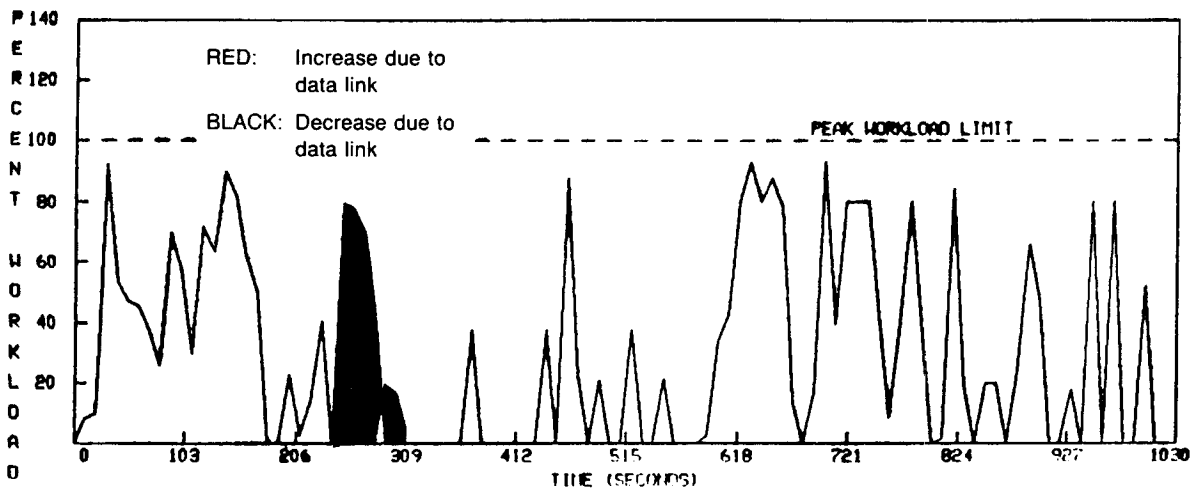


Figure C-74. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

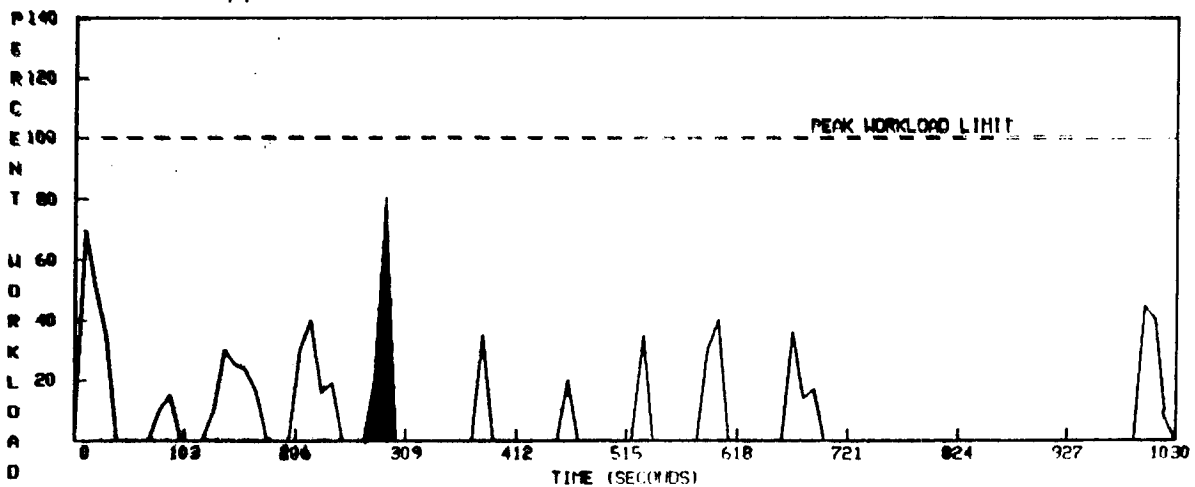


Figure C-75. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

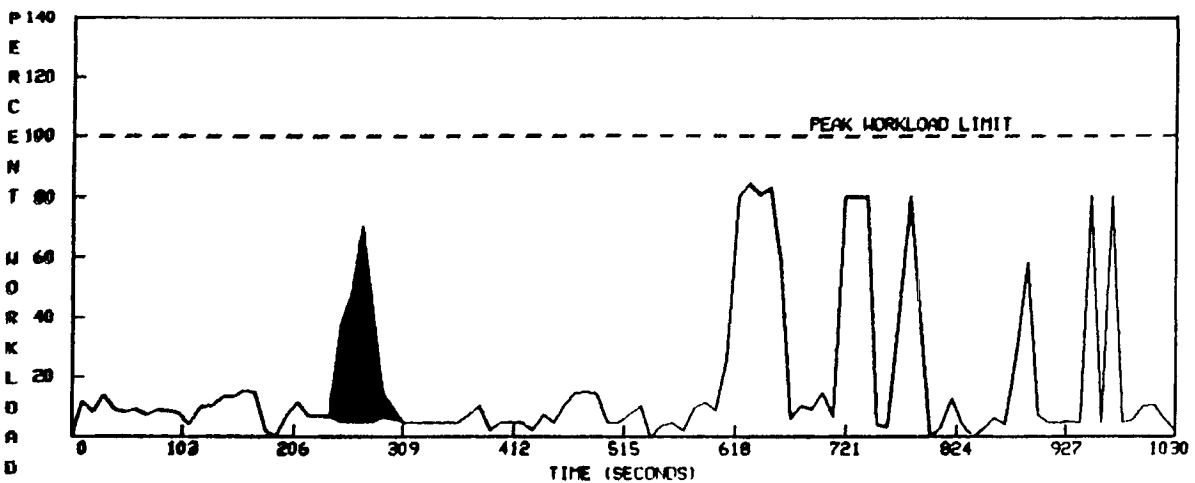


Figure C-76. Conventional Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

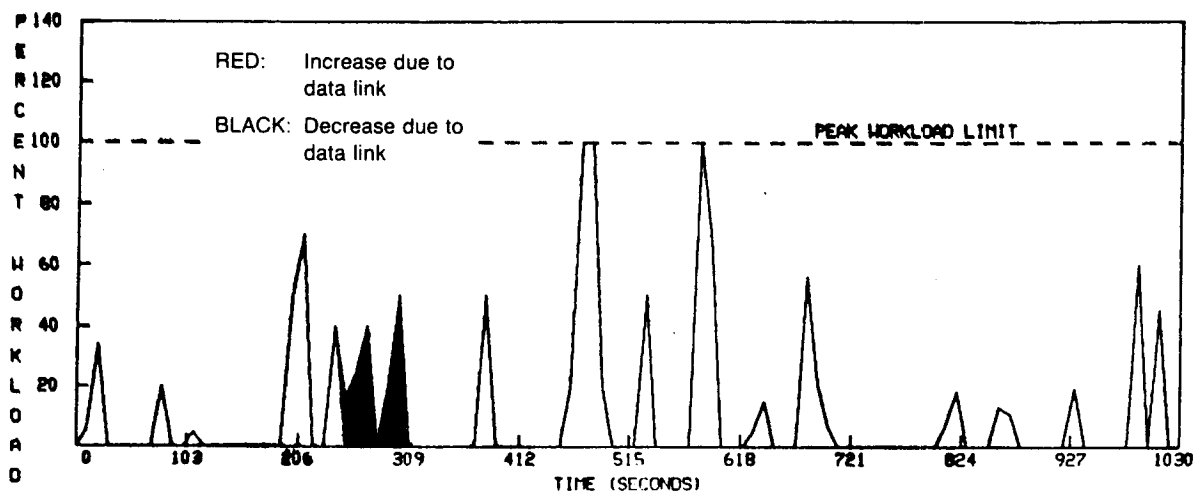


Figure C-77. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

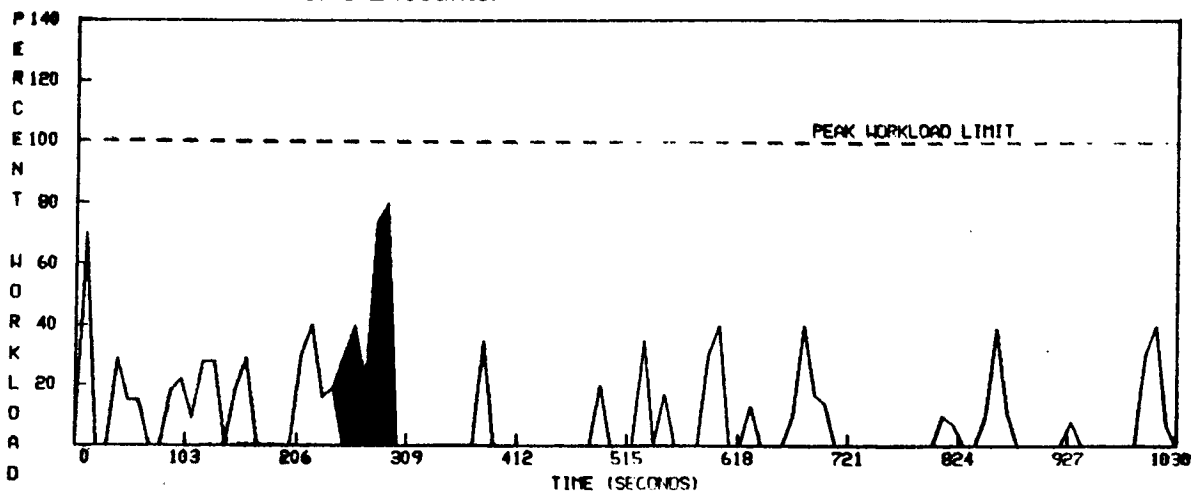


Figure C-78. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With TCAS Encounter

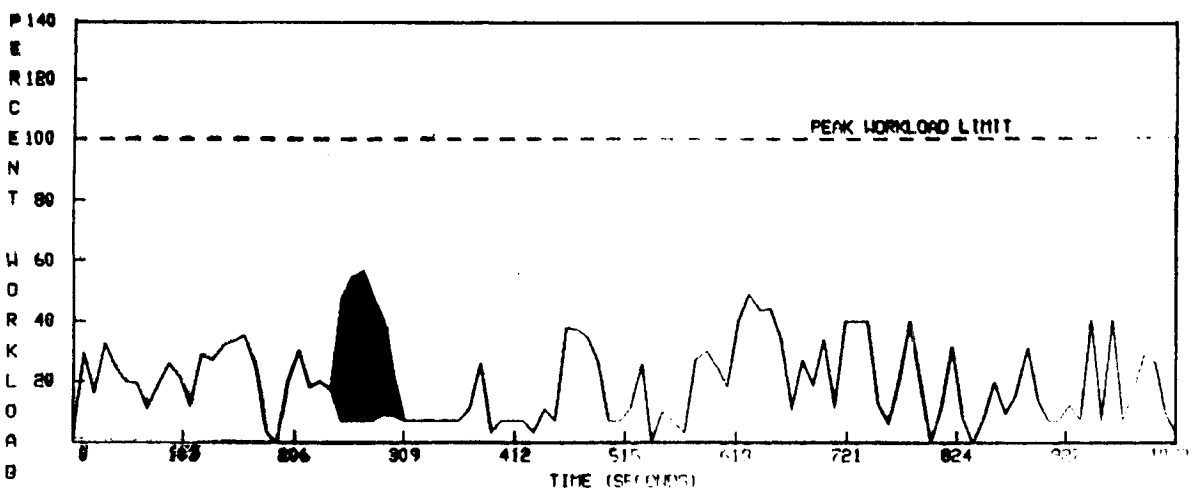


Figure C-79. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

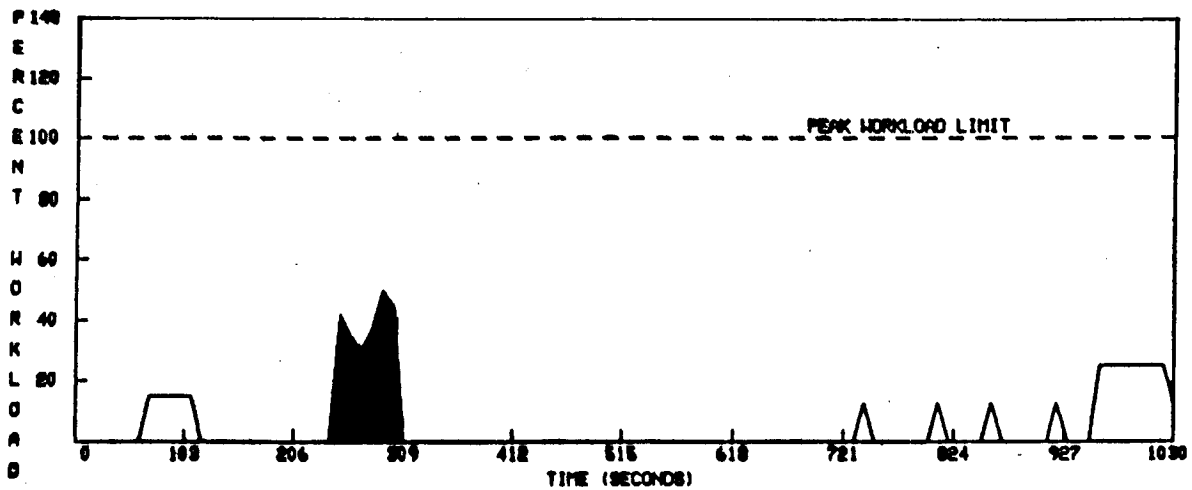


Figure C-80. Advanced Flight Deck, Pilot Tasking, External Vision Channel ILS Approach With TCAS Encounter

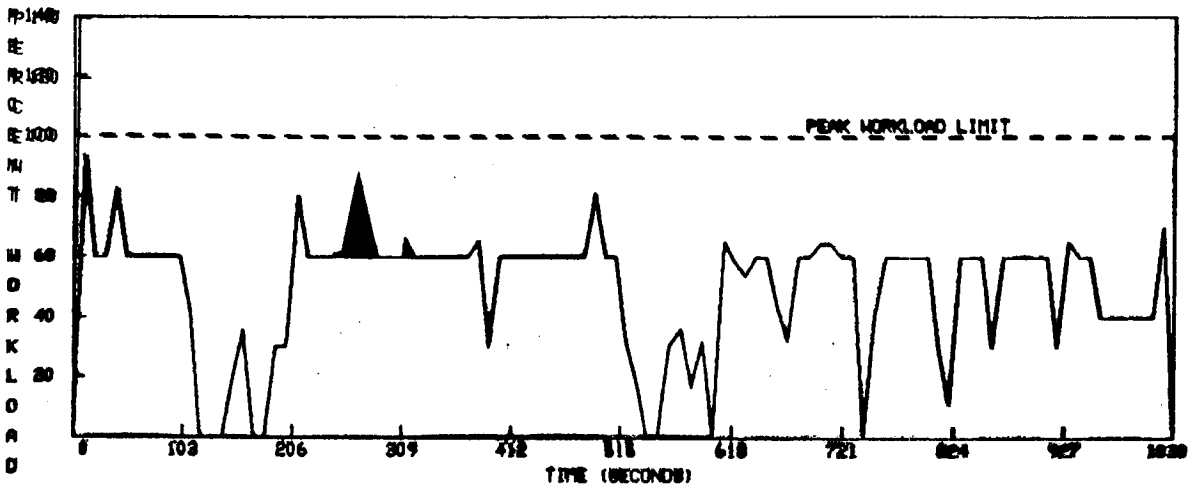


Figure C-81. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

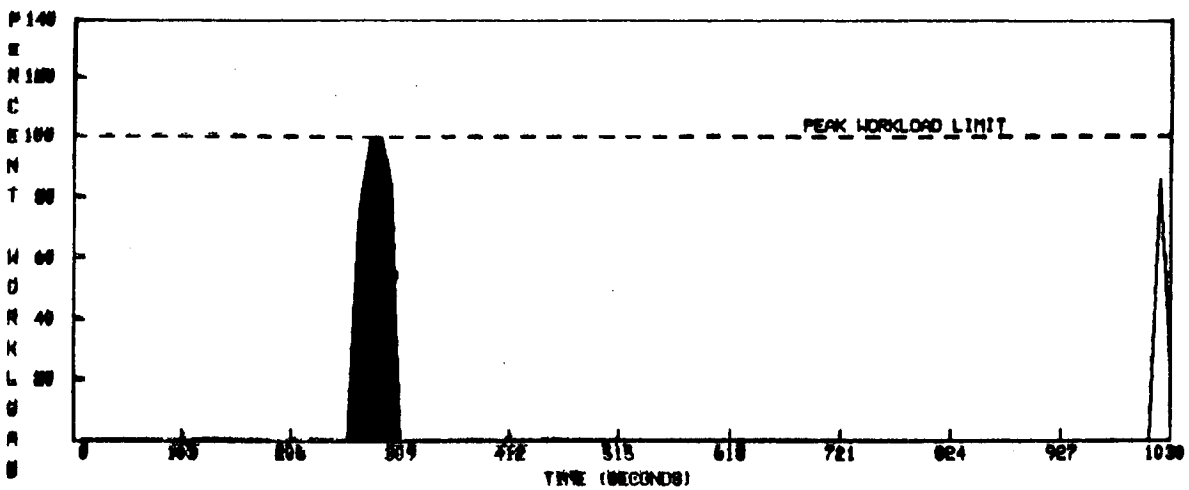


Figure C-82. Advanced Flight Deck, Pilot Tasking, Left Hand Channel ILS Approach With TCAS Encounter

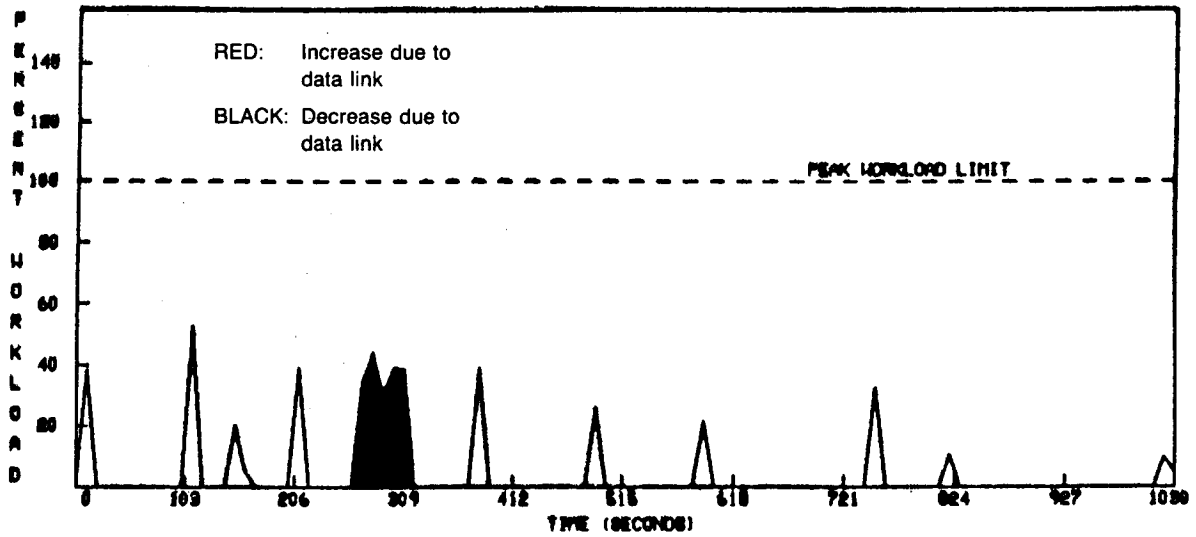


Figure C-83. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

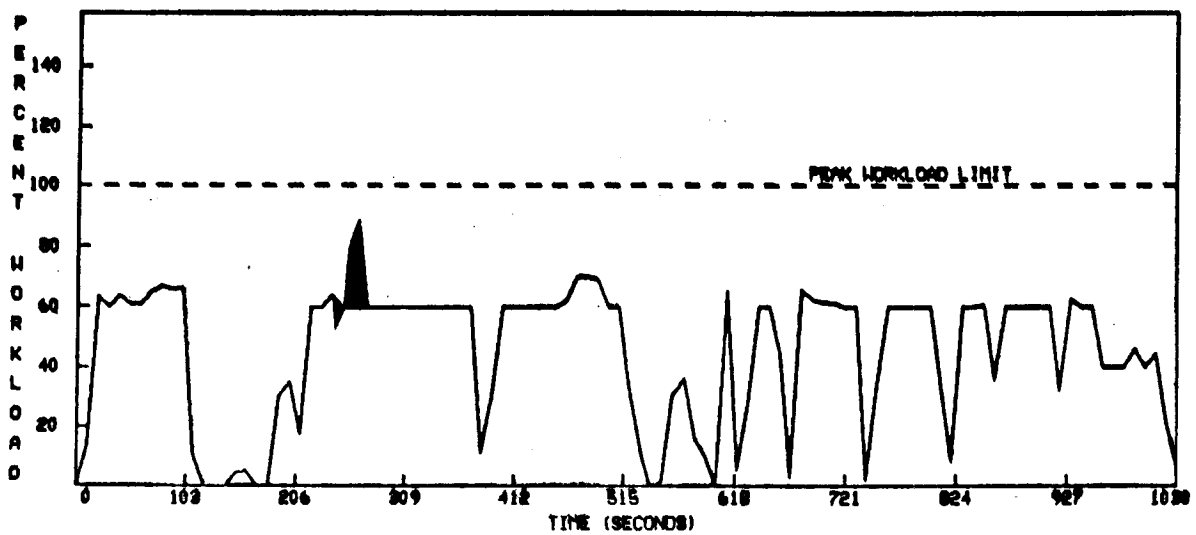


Figure C-84. Advanced Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter



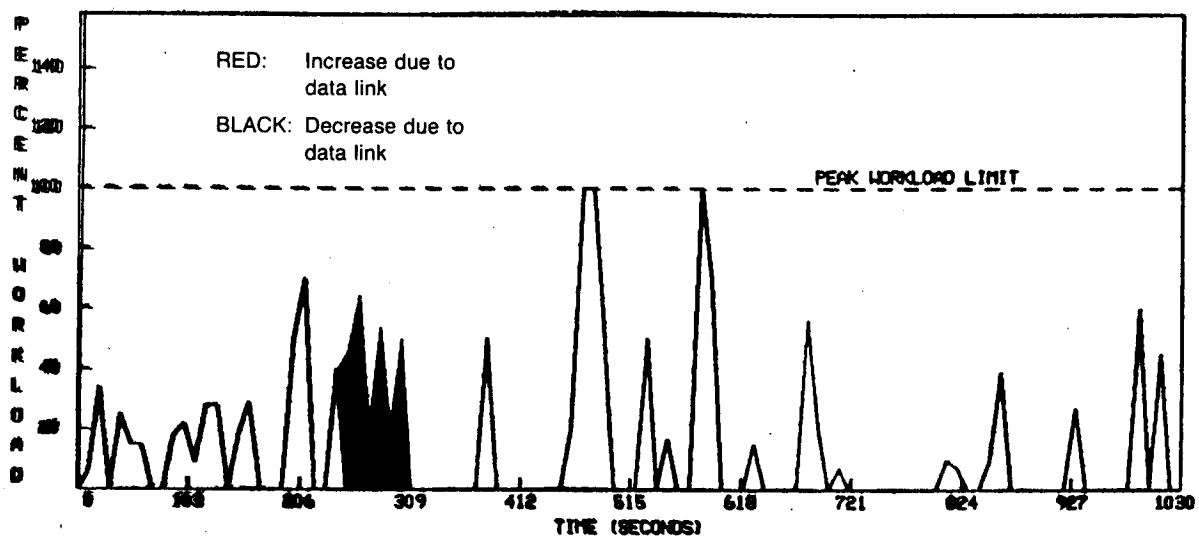


Figure C-85. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

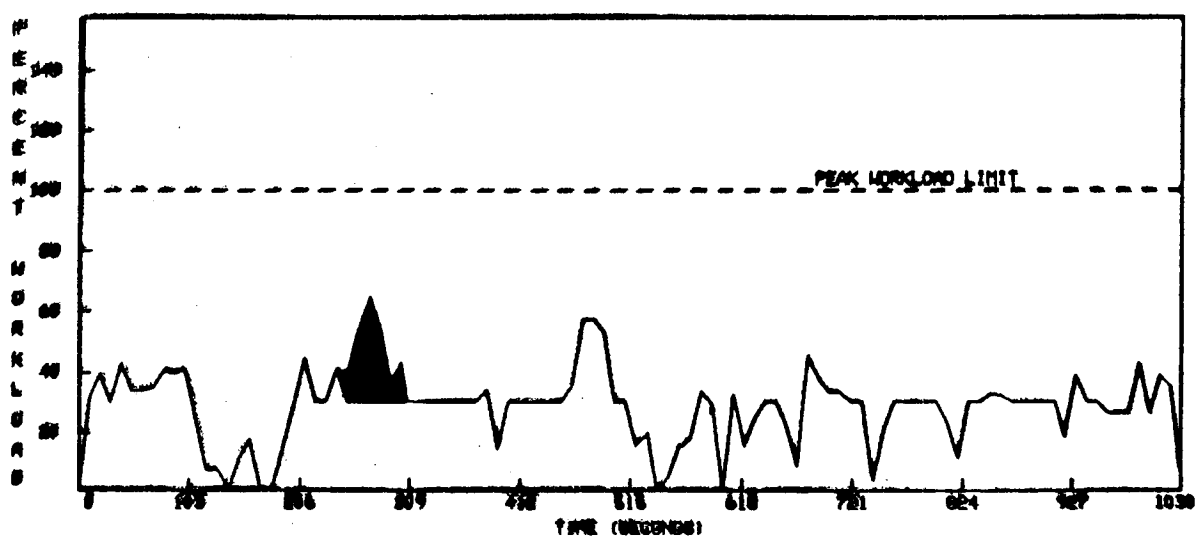


Figure C-86. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

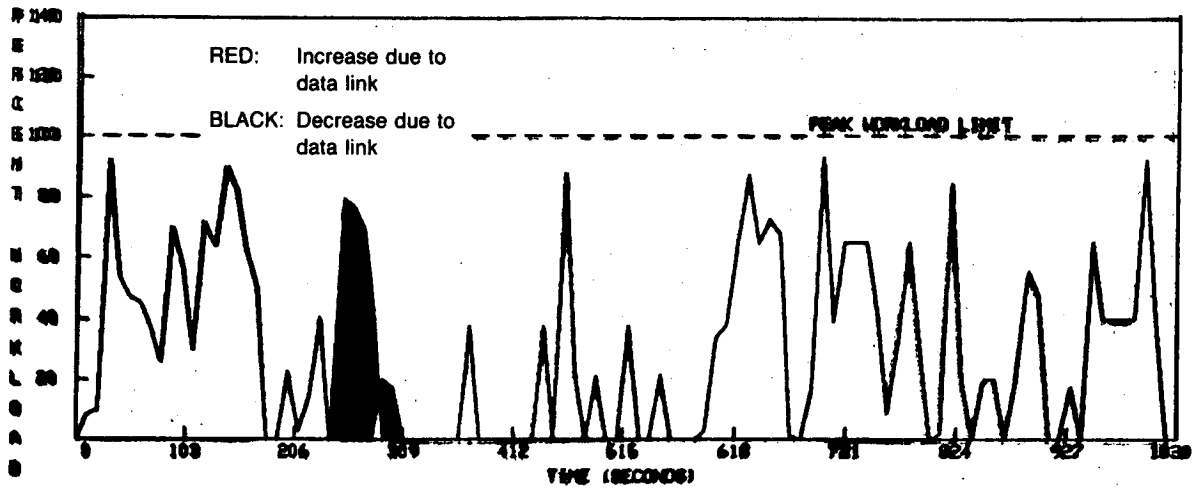


Figure C-87. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

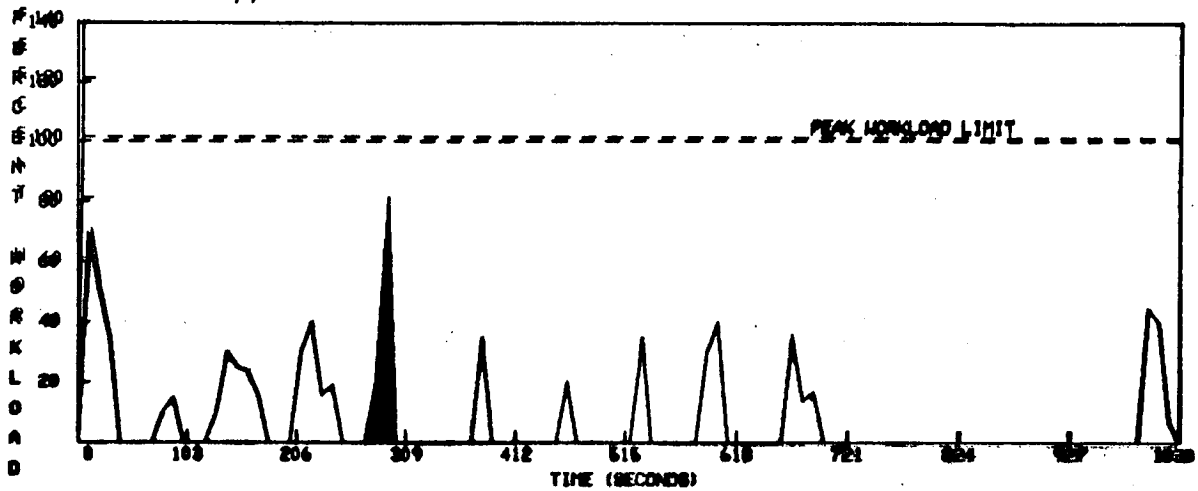


Figure C-88. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

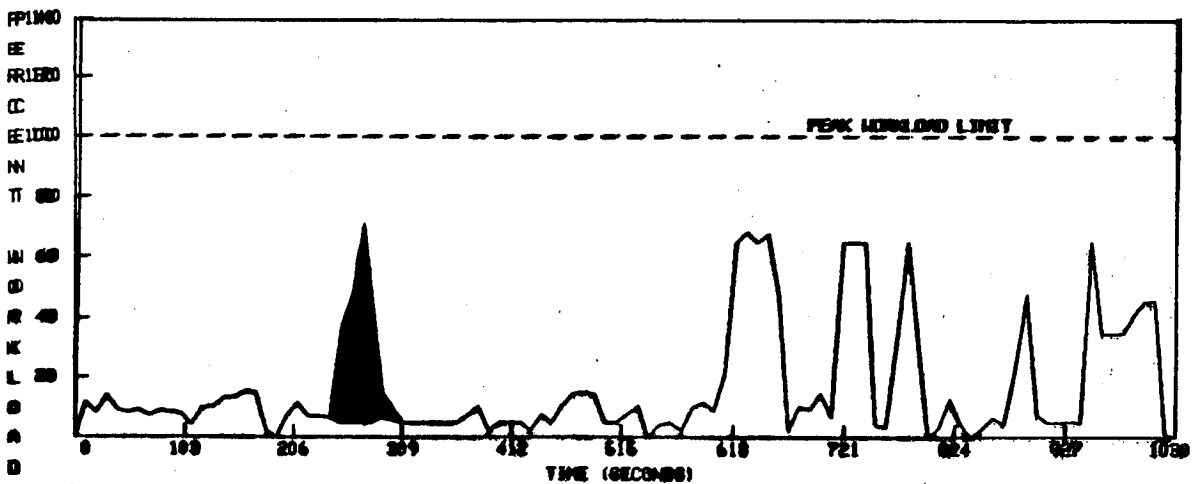


Figure C-89. Advanced Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

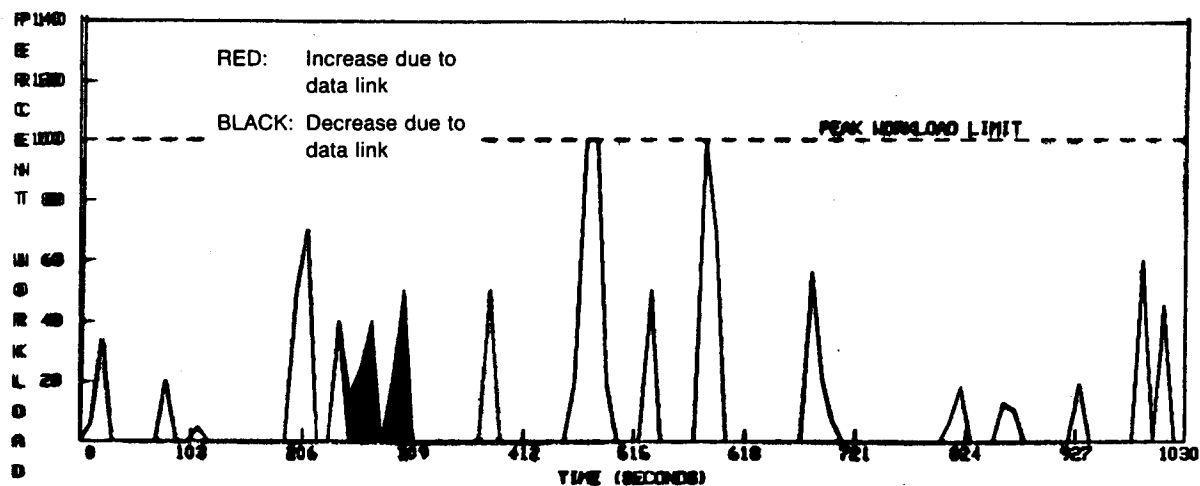


Figure C-90. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

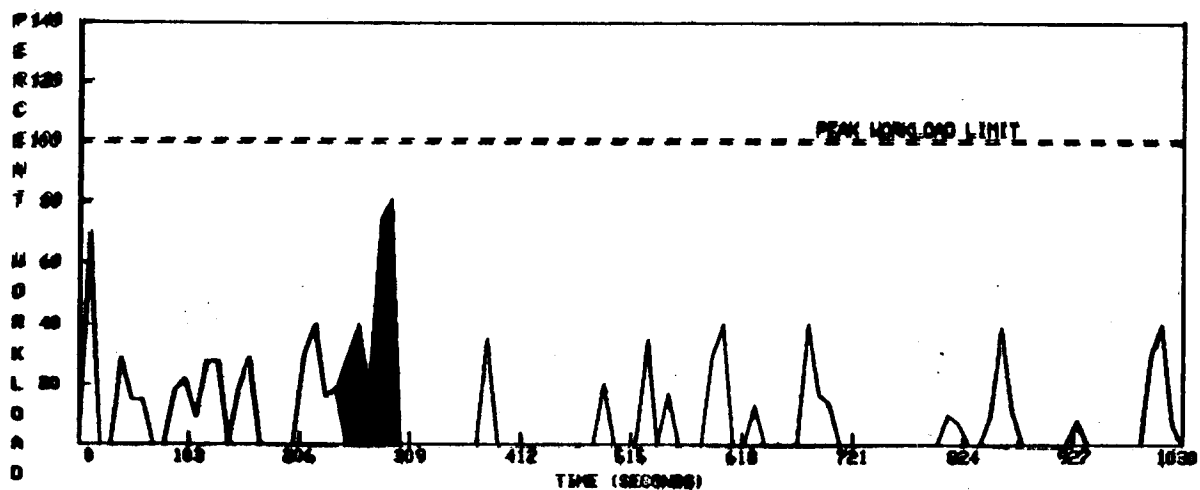


Figure C-91. Advanced Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With TCAS Encounter

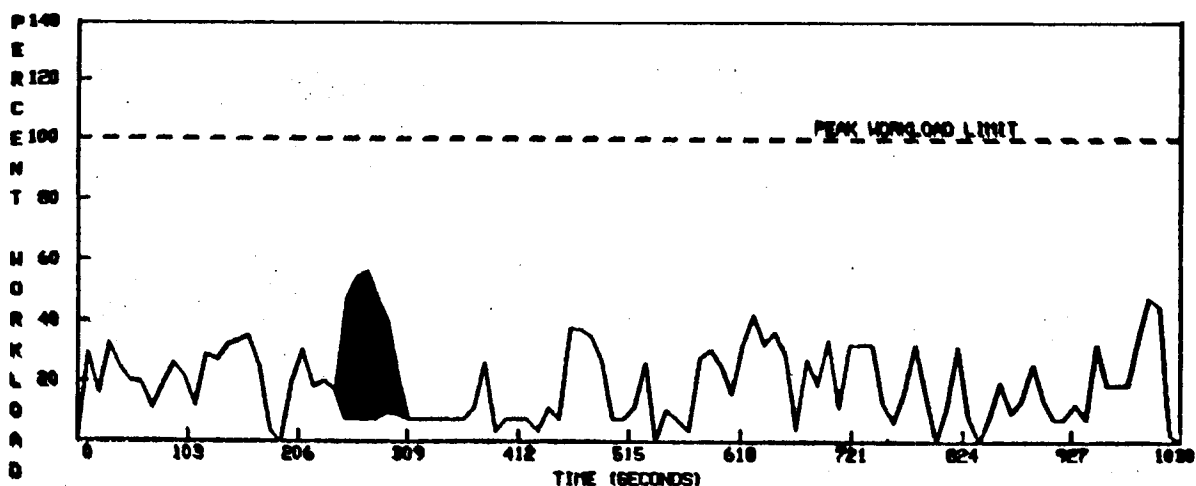


Figure C-92. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter